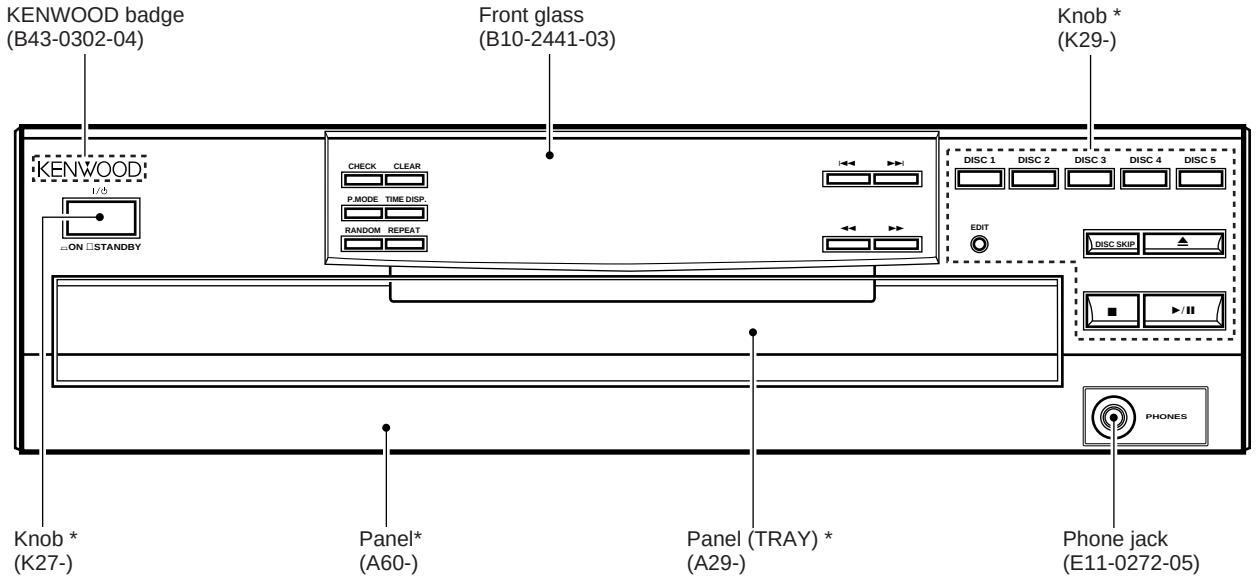
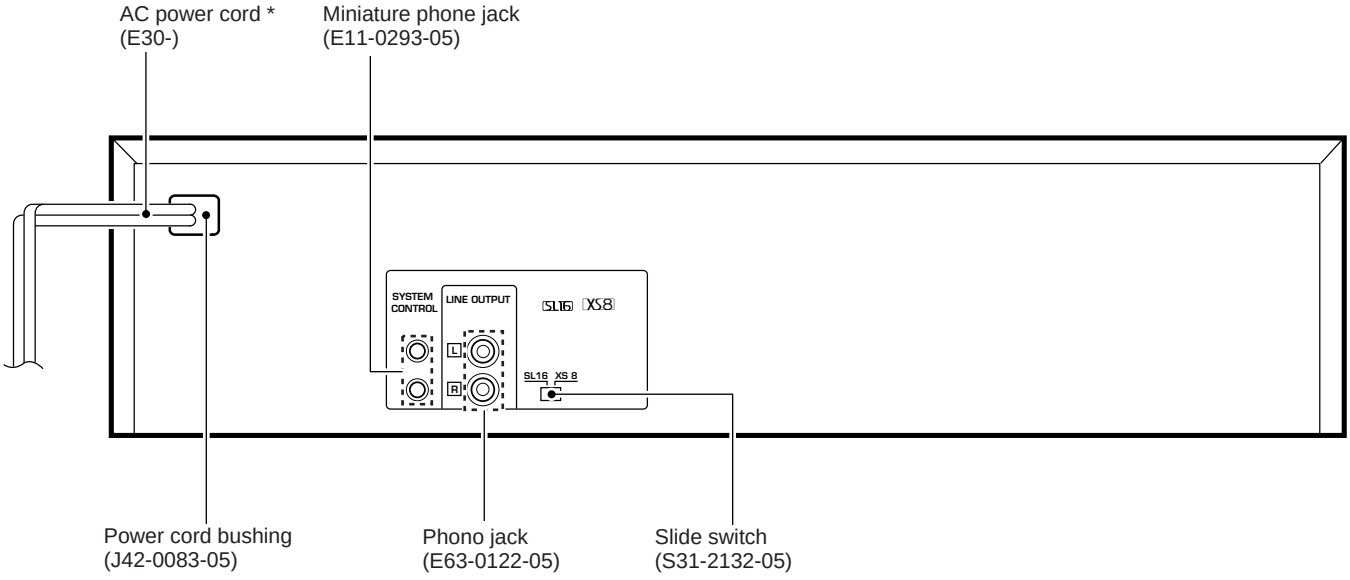
MULTIPLE CD PLAYER

CD-203/DPF-R3010/DPF-R3010E
CD-204/DPF-R4010/DPF-R4010E
SERVICE MANUAL

KENWOOD

© 1998-3/B51-5417-00 (K/K) 3430





Illust is CD-204/DPF-R4010/DPF-R4010E.
*** Refer to parts list on page 16.**

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Crop. certifies this equipment conforms to DHHS Regulations No. 21 DFR 1040. 10, Chapter 1, Subchapter J.

DANGER : Laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM

Refer to **103CD/104CD/1050CD, DP-R797/R3090/R4090 (B51-5269-00)** if you require circuit description and block diagram in detail.

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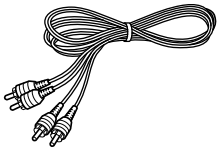
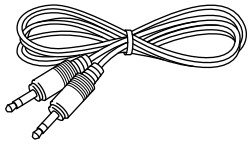
Accessories

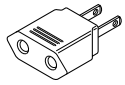
Audio cord (1)
(E30-0505-05)



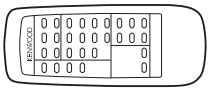
System control cord (1)
(E30-2816-05)



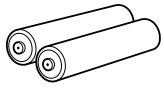
AC plug adapter (1)
(E03-0115-05)
DPF-R3010/R4010 : M type only



Remote control unit (1)
(A70-1128-05) : RC-P0504
CD-204/DPF-R4010/DPF-R4010E only



Batteries (R6/AA) (2)
CD-204/DPF-R4010/DPF-R4010E only



Battery cover: (A09-0356-08)

HOW TO READ THE PARTS LIST

ABBREVIATION OF MODEL AND MASS PRODUCTION'S DESTINATIONS

MODEL	*ABB.*	*Australia*	*Canada*	*China*	*England*	*Europe*	*Germany*	*Korea*	*Malaysia*
CD-203	-	-	P3	-	-	-	-	-	-
DPF-R3010	-	X3	-	-	T3	E3	-	-	-
DPF-R3010E	-	-	-	-	-	E4	-	-	-
CD-204	-	-	P1	-	-	-	-	-	-
DPF-R4010	-	X1	-	-	T1	E1	-	-	-
DPF-R4010E	-	-	-	-	-	E2	-	-	-

MODEL	*ABB.*	*Mexico*	*PX/AAFES*	*Russia*	*Scandinavia*	*Shanghai*	*USA*	*Other area*	
CD-203	-	-	-	-	-	-	K3	-	-
DPF-R3010	-	-	Y3	-	-	-	-	M3	-
DPF-R3010E	-	-	-	-	-	-	-	-	-
CD-204	-	-	-	-	-	-	K1	-	-
DPF-R4010	-	-	Y1	-	-	-	-	M1	-
DPF-R4010E	-	-	-	-	-	-	-	-	-

CIRCUIT DESCRIPTION

1. Pin description

Pin No.	Name	I/O	Function	
1~7	7G~1G	O	Display digit control (Grid7~Grid1)	
8	VDD		Power supply (+5V)	
9	SQCK	O	Q data reading clock output	
10	NC	O	Unused	
11	SUBQ	I	Q data input	
12~15	KR3~KR0	I	Key return 3~0	
16	NC	I	Unused	
17	$\overline{\text{RESET}}$	I	Reset input	L : RESET
18	$\overline{\text{SLT SW}}$	I	CDM25 start limit switch input	L : SW ON
19	$\overline{\text{DOWN SW}}$	I	CDM25 mechanism down switch input	L : SW ON
20	AVSS	I	Unused (connected to VSS)	
21	$\overline{\text{UP SW}}$	I	CDM25 mechanism up switch input	L : SW ON
22	$\overline{\text{CLOSE SW}}$	I	CDM25 close switch input	L : SW ON
23	$\overline{\text{OPEN SW}}$	I	CDM25 open switch input	L : SW ON
24	OPEN M	O	Open motor control	H : ACTIVE
25	CLOSE M	O	Close motor control	H : ACTIVE
26	RTRAY R	O	Rotary tray motor control (CW)	H : ACTIVE
27	RTRAY L	O	Rotary tray motor control (CCW)	H : ACTIVE
28	RTRAY S	O	Rotary tray motor control (deceleration)	H : ACTIVE
29	AVDD		Unused (connected to VDD)	
30	AVREF		Unused (connected to VSS)	
31	NC	I	Unused	
32	XT2		Unused (OPEN)	
33	VSS		GND	
34	X1	I	System clock input	
35	X2		Unused	
36	DSENSE	I	CDM25 disc sensor detection	
37	PSENSE	I	CDM25 position sensor detection	
38	$\overline{\text{LDC}}$	O	Laser signal output	L : LASER ON
39	FOK	I	FOK signal input	H : FOCUS ON
40	D.R.I.V.E	I	Unused	
41	SERIAL SW	I	Serial communication 8 (XS8)/16(SL16) bit changover	H : 16 BIT
42	SDATA	I/O	System serial data signal input output	
43	BUSY	I/O	System serial busy signal input output	
44	SCOR	I	Sub code frame sync detection	
45	MON	O	Focus drug countermeasure circuit control	
46	MUTG	O	Digital mute control	H : MUTE ON
47	REM	I	Remote control signal input	
48	VPP		GND	
49	SENSE	I	Sense input from CXD2507AQ	
50	DTA	O	Data output for CXD2507AQ	
51	CLK	O	Clock output for CXD2507AQ	
52	VDD		Power supply (+5V)	
53,54	DEFECT SEL./NC	I	Unused	
55	LAT	O	Latch output for CXD2507AQ	
56	GFS	I	Frame signal input	
57	$\overline{\text{RMUTE}}$	O	Analog mute control	L : MUTE ON
58	MDT	O	Attenuater data output	
59	MCK	O	Attenuater clock output	
60	MEL	O	Attenuater latch output	
61~70	Sp~Sg/KS	O	Display segment control (Seg p-Seg g) / Key scan	
71	VLOAD		Display drive negative power supply (-35V)	
72~77	Sf~Sa/KS	O	Display segment control (Seg f-Seg a) / Key scan	
78~80	10G-8G	O	Display digit control (Grid10-Grid8)	

CIRCUIT DESCRIPTION

2. Test mode

2-1. Setting the test mode

- The microprocessor built in the unit can be put to TEST MODE by just pressing the TIME DISP. key when set to power on.
- DP-R series is available to set to each test mode by each key.

2-2. Key vs Function in test mode

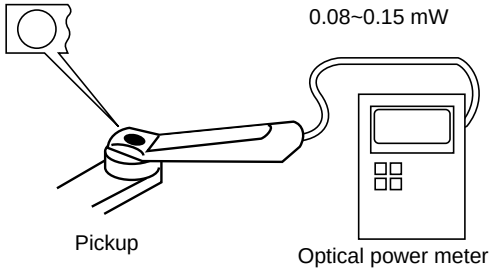
Step	Key name	Display	Description	
1	PLAY/PAUSE (Cyclic)	03	(1) Focus servo .....ON (2) Tracking servo .....OFF (3) Feed servo .....OFF	TE-B adjustment
		05	(1) Focus servo .....ON (2) Tracking servo .....ON (3) Feed servo .....ON	F-GAIN/T-GAIN FE-B adjustment
2	UP		Display goes on	
3	DOWN		Display goes off	
4	DISC1		Search the position of No. 1	
5	STOP	00	(1) Focus servo .....OFF (2) Tracking servo .....OFF (3) Feed servo .....OFF	Waiting key input
6	DISC2	-	Canceled Test mode	Normal mode
7	DISC3	01	Canceled Test mode, then 01 PLAY	Normal mode

ADJUSTMENT

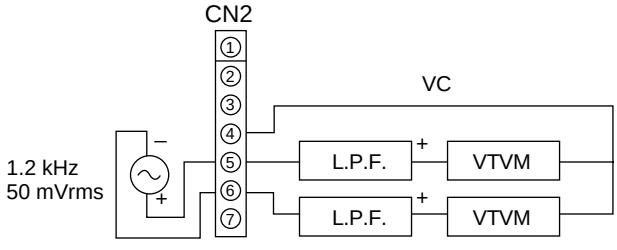
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	PLAYER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Open the tray (Normal mode), then turn the power off.							
1	LASER POWER	–	Apply the sensor section of optical power meter on the pickup lens.	While pressing the TIME DISP. key, turn the AC ON. (Test mode) Press the PLAY/PAUSE key, then confirm that the display is "03".	–	On the power from 0.08 to 0.15 mW, when the diffraction grating is correctly aligned with the RF level of 1.0 Vp-p or more.	(a)
1. Press the STOP key. **2. Press the OPEN key.** **3. Load a disc, then press the CLOSE key.** **4. Press the PLAY key.** **5. Press the OPEN key to open the tray.** **6. Turn the power off. (Player stops as the tray is opened while the disc clamped.)** **7. While pressing the TIME DISP. key, turn the power ON to enter the Test mode.**							
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6)	Press the PLAY/PAUSE key, then confirm that the display is "03".	TE BALANCE VR2	Symmetry between upper and lower patterns	
3	FOCUS ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6)	Press the PLAY/PAUSE key, then confirm that the display is "05".	FE BALANCE VR1	Optimum eye pattern	
4	TRACKING GAIN	Test disc Type 4 Apply signal of 1.2 kHz, 50mVrms to CN2 pin 5-6.	Connect a LPF to CN2 pin 5-6 to which you connect an oscilloscope or AC voltmeters.	Press the PLAY/PAUSE key, then confirm that the display is "05".	TRACKING GAIN VR3	Two VTVMs should read the same value.	(e)

Note:
Type 4 disc : SONY YEDS-18 Test Disc or equivalent.
LPF: Around 47 kΩ+ 390 pF or so.
Step 1~4 are in Test Mode.

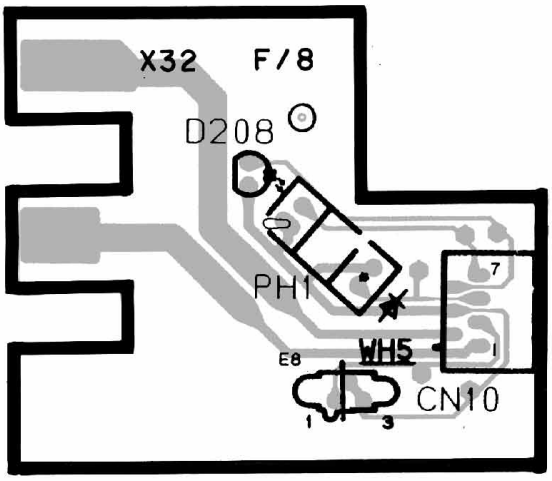
(a) Laser power

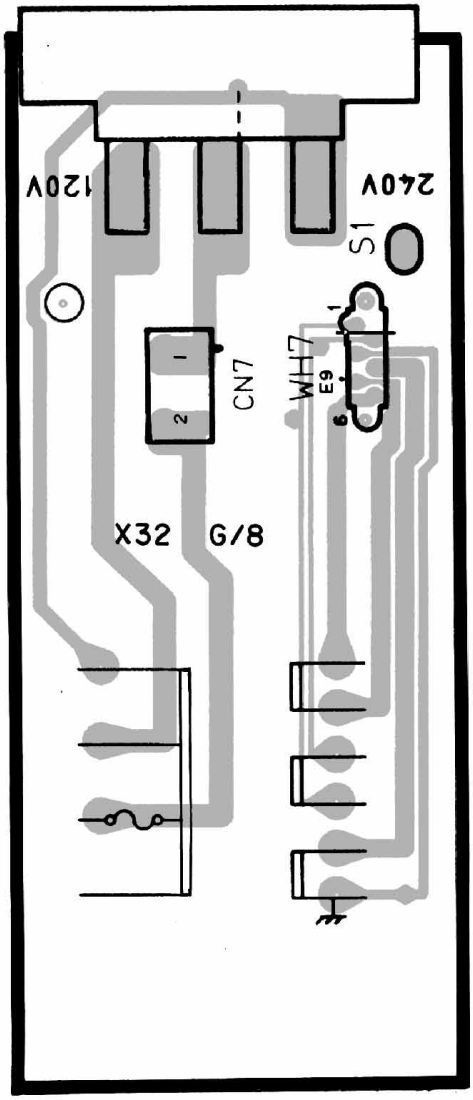


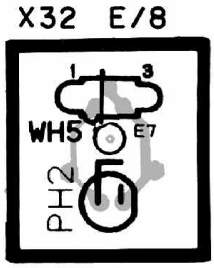
(e) Tracking gain

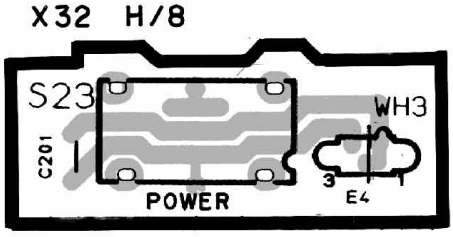


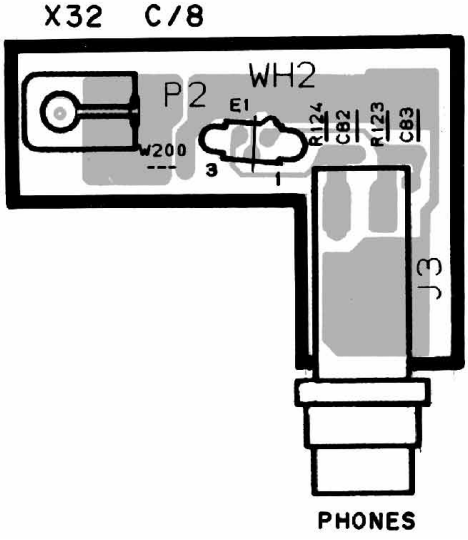
PC BOARD (Component side view)

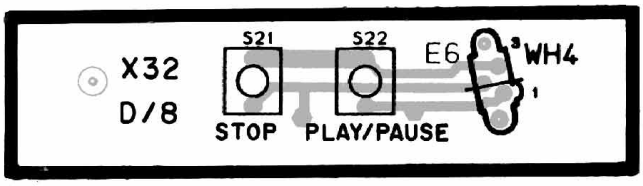










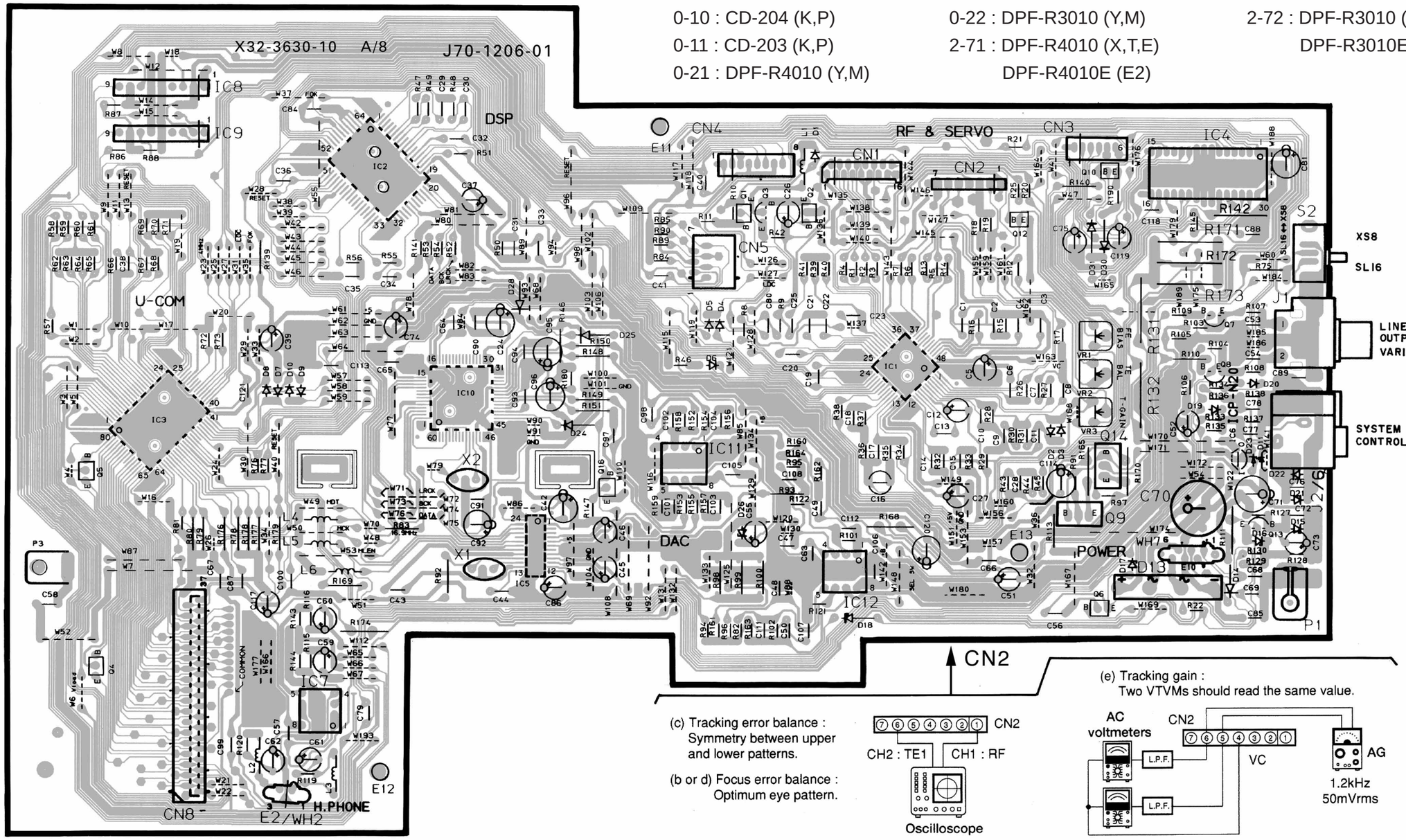


Refer to the schematic diagram for the value of resistors and capacitors.

PC BOARD(Component side view)

X32-363X-XX

0-10 : CD-204 (K,P)
0-11 : CD-203 (K,P)
0-21 : DPF-R4010 (Y,M)
0-22 : DPF-R3010 (Y,M)
2-71 : DPF-R4010 (X,T,E)
DPF-R4010E (E2)
2-72 : DPF-R3010 (X,T,E)
DPF-R3010E (E2)

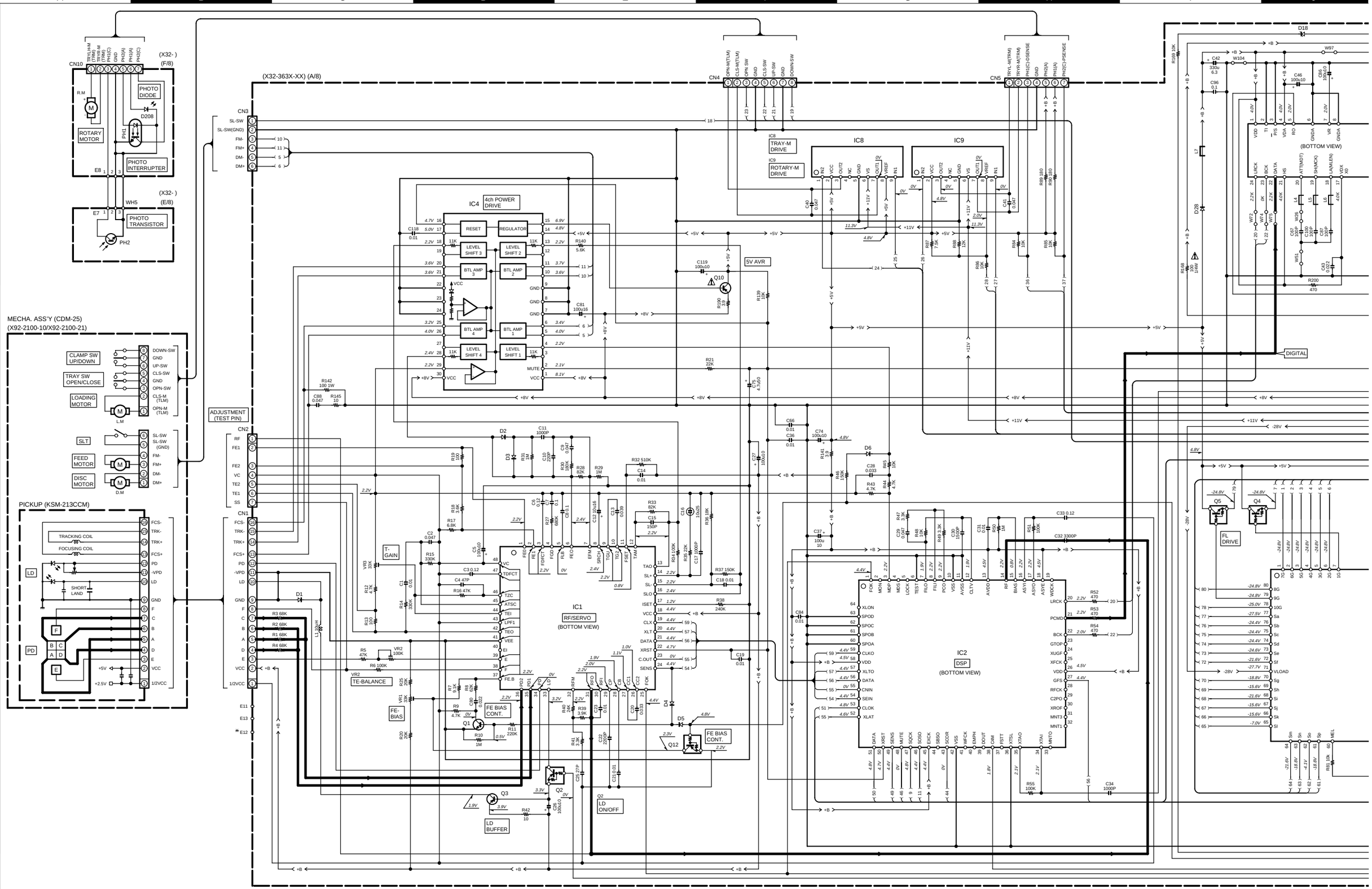


(c) Tracking error balance :
Symmetry between upper and lower patterns.

(b or d) Focus error balance :
Optimum eye pattern.

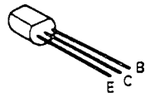
(e) Tracking gain :
Two VTVMs should read the same value.

Refer to the schematic diagram for the value of resistors and capacitors.


(X32-363X-XX) (A/8)
CN10
(X32-) (F/8)
PHOTO DIODE
D208
PH1
ROTARY MOTOR
PHOTO INTERRUPTER
E8
WH5
(X32-) (E/8)
PHOTO TRANSISTOR
PH2
CN3
SL-SW
SL-SW(GND)
FM-
FM+
DM-
DM+
CN4
OPN-M(TLM)
CLS-M(TLM)
OPN SW
GND
CLS-SW
UP-SW
GND
DOWN-SW
CN5
TRY/L-M(TRM)
TRY/R-M(TRM)
PH1(C)-PSENSE
GND
PH2(A)
PH1(A)
PH2(C)-PSENSE
IC8
TRAY-M DRIVE
IC9
ROTARY-M DRIVE
IC4
4ch POWER DRIVE
RESET
REGULATOR
LEVEL SHIFT 3
LEVEL SHIFT 2
LEVEL SHIFT 4
LEVEL SHIFT 1
BTL AMP 3
BTL AMP 2
BTL AMP 4
BTL AMP 1
5V AVR
Q10
MECHA. ASS'Y (CDM-25)
(X92-2100-10/X92-2100-21)
CLAMP SW UP/DOWN
TRAY SW OPEN/CLOSE
LOADING MOTOR
L.M
SLT
FEED MOTOR
DISC MOTOR
D.M
DOWN-SW
GND
UP-SW
CLS-SW
GND
OPN-SW
CLS-M (TLM)
OPN-M (TLM)
SL-SW
SL-SW (GND)
FM-
FM+
DM-
DM+
PICKUP (KSM-213CCM)
TRACKING COIL
FOCUSING COIL
SHORT LAND
LD
PD
FCS-
TRK-
TRK+
FCS+
PD
-VPD
LD
GND
F
C
B
A
D
E
VCC
1/2VCC
+5V
+2.5V
ADJUSTMENT (TEST PIN)
CN2
CN1
T-GAIN
FE-BIAS
TE-BALANCE
FE BIAS CONT.
LD BUFFER
LD ON/OFF
IC1
RF/SERVO
(BOTTOM VIEW)
IC2
DSP
(BOTTOM VIEW)
FL DRIVE
DIGITAL
D1
L1 10uH
D2
D3
D4
D5
D6
Q1
Q2
Q3
Q12
W97
W104
D18
D28
L7
L4
L5
L6
W72
W74
W75
W76
W77
W78
W79
W80
W81
(BOTTOM VIEW)

K L M N O P Q R S T

2SA1534A
2SA954
2SA992
2SC2878



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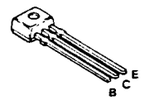

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UN4112
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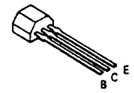
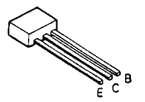


UN4212
UN4219



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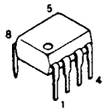

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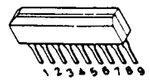

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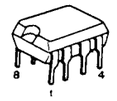

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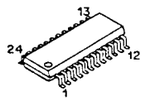

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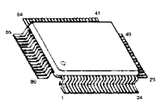

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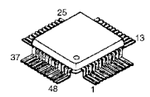

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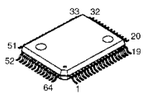

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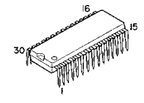
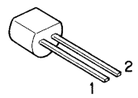


ICP-N20



CD-203 (X32-3630-11)

DESTINATION		UNIT No.	Ⓒ	IC6	S1	E12	W122, 187
COUNTRY	ABB.						
U.S.A.	K	0-11	NO	NO	NO	NO	YES
CANADA	P						

DPF-R3010(X32-363X-XX)

DESTINATION		UNIT No.	Ⓒ	IC6	S1	E12	W122	W187
COUNTRY	ABB.							
PX	Y	0-22	NO	YES	YES	NO	NO	NO
GENERAL MARKET	M							
AUSTRALIA	X	2-72			NO			YES
U.K.	T							
EUROPE	E							

CD-204 (X32-3630-11)

DESTINATION		UNIT No.	Ⓒ	IC6	S1	E12	W122, 187
COUNTRY	ABB.						
U.S.A.	K	0-10	YES	NO	NO	YES	YES
CANADA	P						

DPF-R4010(X32-363X-XX)

DESTINATION		UNIT No.	Ⓒ	IC6	S1	E12	W122	W187
COUNTRY	ABB.							
PX	Y	0-21	YES	YES	YES	YES	NO	NO
GENERAL MARKET	M							
AUSTRALIA	X	2-71			NO			YES
U.K.	T							
EUROPE	E							

IC1 : CXA1782BQ 1 ※
IC2 : CXD2507AQ 1 ※
IC3 : UPD78044FGF023
IC4 : LA6541D
IC5 : TC9293AF
IC6 : ICP-N20
IC7 : NJM4580D
IC8,9 : TA8409S
IC12 : NJM4565D

Q1 : 2SC2785(F,E) or
2SC1740S(Q,R)
Q2,12 : UN4112 or DTA124ESA
Q3 : 2SA954(L,K)
Q4,5 : UN4219 or DTC113ZSA
Q6 : UN4212 or DTC124ESA
Q7,8 : 2SC2878(B)
Q9,14 : 2SD2012
Q10 : 2SA1534A
Q13 : 2SA992(F,E)

D1-10,19-22,28,201-207,209
: 1SS133 or HSS104
D13 : D3SBA20F03
D14 : S5688B or 1SR139-400
D15 : UZ-30BS or MTZJ30(B)
D16,18 : UZ-5.6BSB or MTZJ5.6(B)
D17 : UZ-4.7BSB or MTZJ4.7(B)
D23 : UZ-8.2BSB or MTZJ8.2(B)
D26 : UZ-10BSB or MTZJ10(B)
D208 : SIR-33ST3

PH1 : T95-0145-05
PH2 : RPT-38PT3F

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

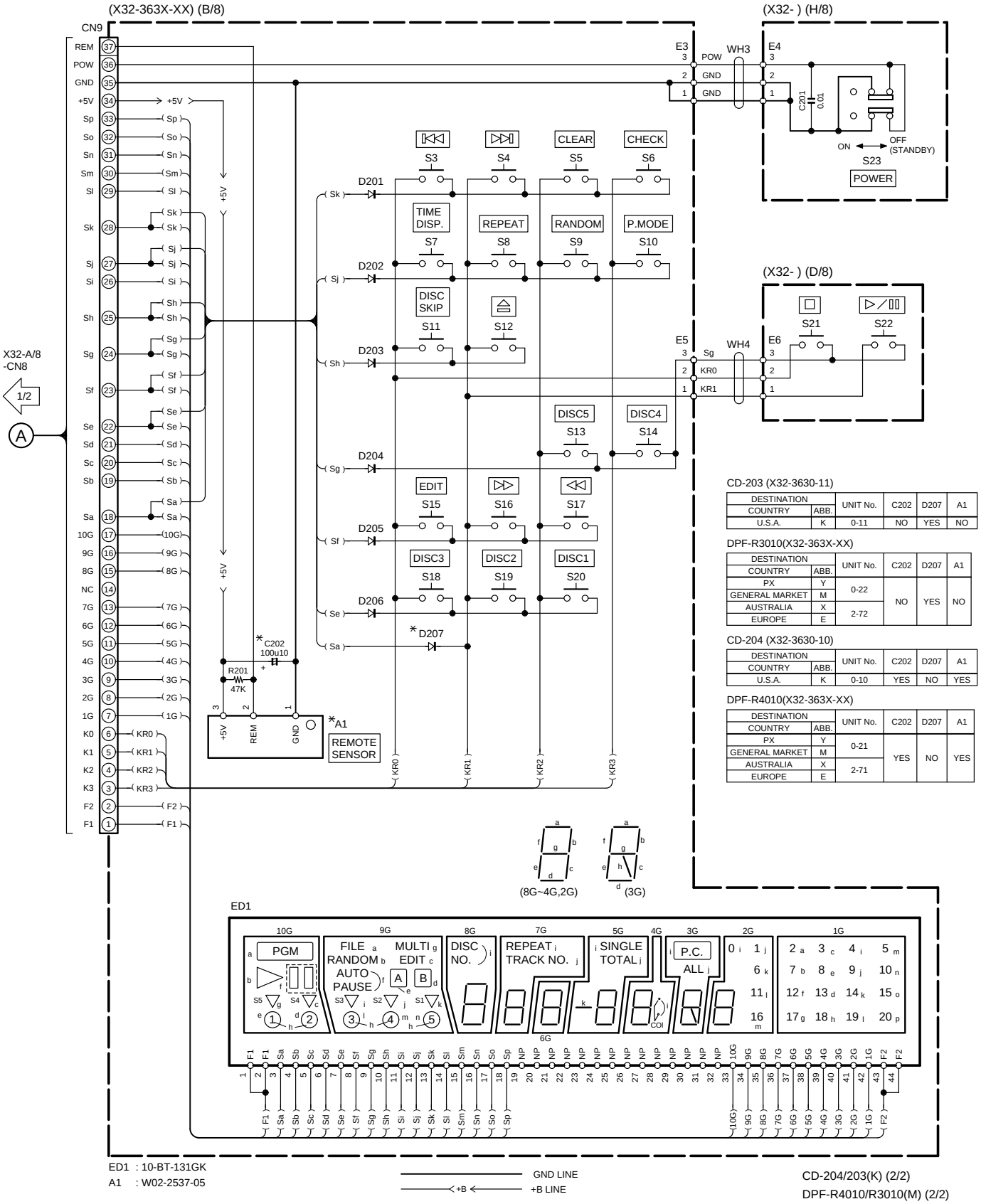
The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage during PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP.

CD-203/204(K) (1/2)
DPF-R3010/R4010(M) (1/2)

Y22-7540-10

CD-203/204/DPF-R3010/R3010E/R4010/R4010E

KENWOOD



CD-203 (X32-3630-11)

DESTINATION		UNIT No.	C202	D207	A1
COUNTRY	ABB.				
U.S.A.	K	0-11	NO	YES	NO

DPF-R3010(X32-363X-XX)

DESTINATION		UNIT No.	C202	D207	A1
COUNTRY	ABB.				
PX	Y	0-22	NO	YES	NO
GENERAL MARKET	M				
AUSTRALIA	X	2-72			
EUROPE	E				

CD-204 (X32-3630-10)

DESTINATION		UNIT No.	C202	D207	A1
COUNTRY	ABB.				
U.S.A.	K	0-10	YES	NO	YES

DPF-R4010(X32-363X-XX)

DESTINATION		UNIT No.	C202	D207	A1
COUNTRY	ABB.				
PX	Y	0-21	YES	NO	YES
GENERAL MARKET	M				
AUSTRALIA	X	2-71			
EUROPE	E				

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

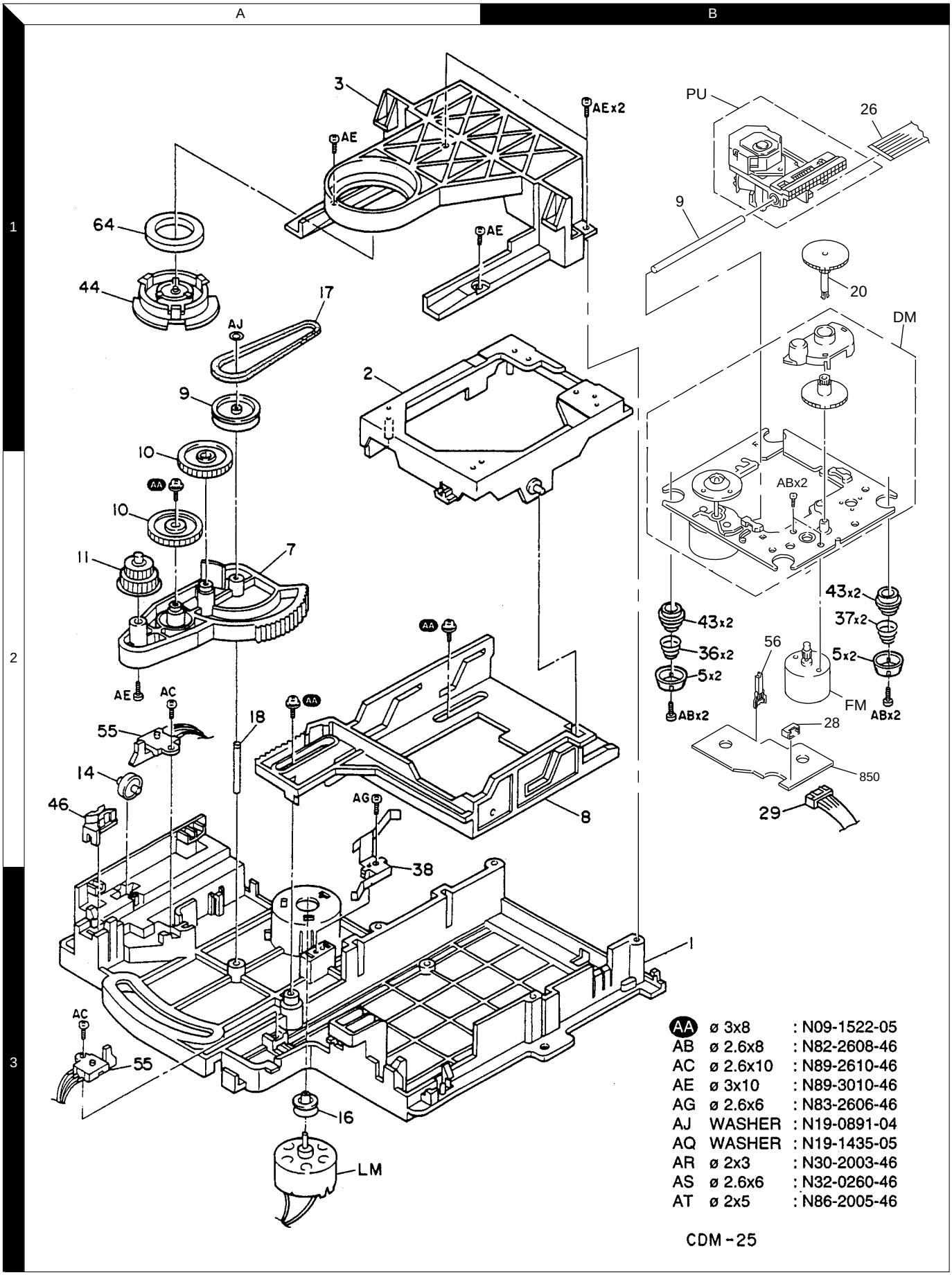
The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage during PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP.

CD-203/204/DPF-R3010/R3010E/R4010/R4010E

Y22-7540-10

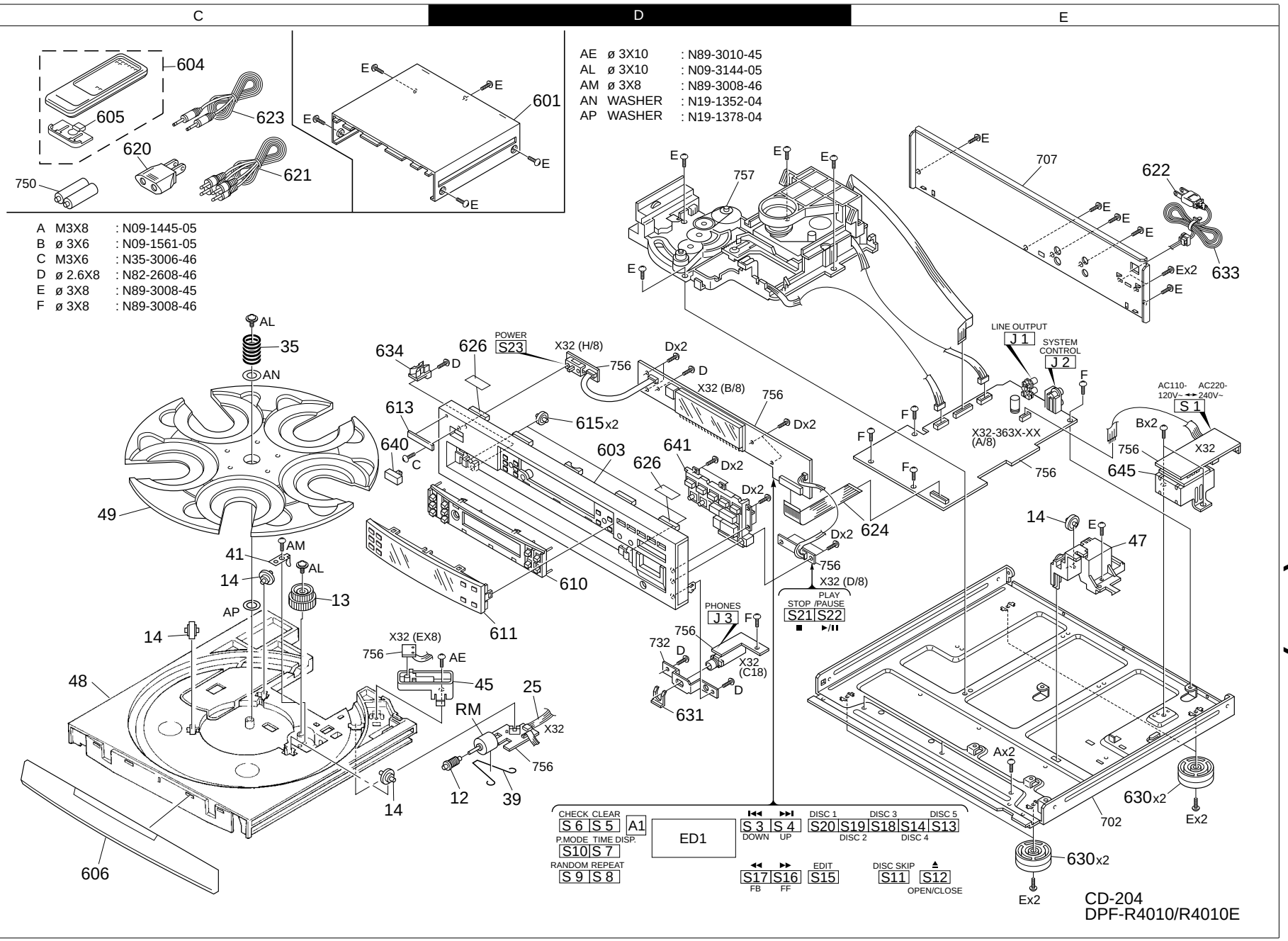
KENWOOD

EXPLODED VIEW (MECHANISM)



Parts with exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (UNIT)



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Teile ohne **Parts No.** werden nicht geliefert.

❶

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
CD-203/DPF-R3010/3010E/CD-204/DPF-4010/4010E						
601	1D	✻	A01-3547-01	METALLIC CABINET		
603	1D	✻	A60-1348-21	PANEL	K1P1	
603	1D	✻	A60-1349-21	PANEL	Y1	
603	1D	✻	A60-1350-21	PANEL	K3P3	
603	1D	✻	A60-1351-21	PANEL	Y3	
603	1D	✻	A60-1460-21	PANEL	E1E2	
603	1D	✻	A60-1460-21	PANEL	M1X1T1	
603	1D	✻	A60-1461-21	PANEL	E3E4	
603	1D	✻	A60-1461-21	PANEL	M3X3T3	
604	1C		A70-1128-05	REMOTE CONTROLLER(RC-P0504)	E1E2	
604	1C		A70-1128-05	REMOTE CONTROLLER(RC-P0504)	K1P1Y1	
604	1C		A70-1128-05	REMOTE CONTROLLER(RC-P0504)	M1X1T1	
605	1C		A09-0356-08	BATTERY COVER	E1E2	
605	1C		A09-0356-08	BATTERY COVER	K1P1Y1	
605	1C		A09-0356-08	BATTERY COVER	M1X1T1	
606	2C	✻	A29-0895-12	PANEL	K1P1Y1	
606	2C	✻	A29-0895-12	PANEL	K3P3Y3	
606	2C	✻	A29-1013-12	PANEL	E1E2	
606	2C	✻	A29-1013-12	PANEL	E3E4	
606	2C	✻	A29-1013-12	PANEL	M1X1T1	
606	2C	✻	A29-1013-12	PANEL	M3X3T3	
610	2D	✻	B07-2404-12	ESCUTCHEON	K1P1Y1	
610	2D	✻	B07-2404-12	ESCUTCHEON	K3P3Y3	
610	2D	✻	B07-2417-12	ESCUTCHEON	E1E2	
610	2D	✻	B07-2417-12	ESCUTCHEON	E3E4	
610	2D	✻	B07-2417-12	ESCUTCHEON	M1X1T1	
610	2D	✻	B07-2417-12	ESCUTCHEON	M3X3T3	
611	2D	✻	B10-2441-03	FRONT GLASS		
613	2C		B43-0302-04	KENWOOD BADGE		
-			B46-0096-53	WARRANTY CARD	X1	
-			B46-0096-53	WARRANTY CARD	X3	
-			B46-0197-00	QUESTIONNAIRE CARD	K1	
-			B46-0197-00	QUESTIONNAIRE CARD	K3	
-			B46-0310-03	WARRANTY CARD	T1E1E2	
-			B46-0310-03	WARRANTY CARD	T3E3E4	
-			B46-0328-03	WARRANTY CARD	K1Y1	
-			B46-0328-03	WARRANTY CARD	K3Y3	
-			B46-0336-03	WARRANTY CARD	P1	
-			B46-0336-03	WARRANTY CARD	P3	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y1	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y3	
-			B58-0945-03	CAUTION CARD	T1	
-			B58-0945-03	CAUTION CARD	T3	
-			B58-0964-13	CAUTION CARD (UL)	K1Y1	
-			B58-0964-13	CAUTION CARD (UL)	K3Y3	
-		✻	B58-0965-13	CAUTION CARD (T,XtypePL)	X1T1	
-		✻	B58-0965-13	CAUTION CARD (T,XtypePL)	X3T3	
-		✻	B58-0966-13	CAUTION CARD (ELMtypePL)	M1E1	
-		✻	B58-0966-13	CAUTION CARD (ELMtypePL)	M3E3	
-		✻	B58-0967-03	CAUTION CARD (PtypePL)	P1	
-		✻	B58-0967-03	CAUTION CARD (PtypePL)	P3	
-		✻	B58-1607-03	CAUTION CARD	E2E4	

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❷

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
-			B59-1104-00	SERVICE DIRECTORY	Y1	
-			B59-1104-00	SERVICE DIRECTORY	Y3	
-		✻	B60-3684-00	INSTRUCTION MANUAL(ENGLISH)	E2	
-		✻	B60-3684-00	INSTRUCTION MANUAL(ENGLISH)	E4	
-		✻	B60-3684-00	INSTRUCTION MANUAL(ENGLISH)	K1P1Y1	
-		✻	B60-3684-00	INSTRUCTION MANUAL(ENGLISH)	K3P3Y3	
-		✻	B60-3684-00	INSTRUCTION MANUAL(ENGLISH)	M1X1T1	
-		✻	B60-3684-00	INSTRUCTION MANUAL(ENGLISH)	M3X3T3	
-		✻	B60-3685-00	INSTRUCTION MANUAL(FRENCH)	P1E1	
-		✻	B60-3685-00	INSTRUCTION MANUAL(G,D,I)	P3E3	
-		✻	B60-3686-00	INSTRUCTION MANUAL(G,D,I)	E1	
-		✻	B60-3686-00	INSTRUCTION MANUAL(G,D,I)	E3	
-		✻	B60-3687-00	INSTRUCTION MANUAL(SPANISH)	M1E1	
-		✻	B60-3687-00	INSTRUCTION MANUAL(SPANISH)	M3E3	
-		✻	B60-3688-00	INSTRUCTION MANUAL(TAIWANESE)	M1	
-		✻	B60-3688-00	INSTRUCTION MANUAL(TAIWANESE)	M3	
-		✻	B60-3969-00	INSTRUCTION MANUAL(PH)	E2E4	
-		✻	B60-3970-00	INSTRUCTION MANUAL(R)	E2E4	
-		✻	B60-3971-00	INSTRUCTION MANUAL(CZ)	E2E4	
-		✻	B60-3972-00	INSTRUCTION MANUAL(HG)	E2E4	
615	1D		D14-0389-04	ROLLER		
⚠ 620	1C		E03-0115-05	AC PLUG ADAPTER	M1	
⚠ 620	1C		E03-0115-05	AC PLUG ADAPTER	M3	
621	1C		E30-0505-05	AUDIO CORD		
⚠ 622	1E		E30-2787-05	AC POWER CORD	K1P1	
⚠ 622	1E		E30-2787-05	AC POWER CORD	K3P3	
⚠ 622	1E		E30-2788-05	AC POWER CORD	M1E1E2	
⚠ 622	1E		E30-2788-05	AC POWER CORD	M3E3E4	
⚠ 622	1E		E30-2789-05	AC POWER CORD	Y1	
⚠ 622	1E		E30-2789-05	AC POWER CORD	Y3	
⚠ 622	1E		E30-2790-05	AC POWER CORD	X1	
⚠ 622	1E		E30-2790-05	AC POWER CORD	X3	
⚠ 622	1E		E30-2791-05	AC POWER CORD	T1	
⚠ 622	1E		E30-2791-05	AC POWER CORD	T3	
623	1C		E30-2816-05	CORD WITH PLUG		
624	2E	✻	E35-2059-05	FLAT CABLE (37P)		
626	2D		G10-0444-04	NON-WOVEN FABRIC		
-		✻	H10-7430-02	POLYSTYRENE FOAMED FIXTURE(L)	E2	
-		✻	H10-7430-02	POLYSTYRENE FOAMED FIXTURE(L)	E4	
-		✻	H10-7430-02	POLYSTYRENE FOAMED FIXTURE(L)	K1P1Y1	
-		✻	H10-7430-02	POLYSTYRENE FOAMED FIXTURE(L)	K3P3Y3	
-		✻	H10-7430-02	POLYSTYRENE FOAMED FIXTURE(L)	M1X1E1	
-		✻	H10-7430-02	POLYSTYRENE FOAMED FIXTURE(L)	M3X3E3	
-		✻	H10-7431-12	POLYSTYRENE FOAMED FIXTURE(R)	E2	
-		✻	H10-7431-12	POLYSTYRENE FOAMED FIXTURE(R)	E4	
-		✻	H10-7431-12	POLYSTYRENE FOAMED FIXTURE(R)	K1P1Y1	
-		✻	H10-7431-12	POLYSTYRENE FOAMED FIXTURE(R)	K3P3Y3	
-		✻	H10-7431-12	POLYSTYRENE FOAMED FIXTURE(R)	M1X1E1	
-		✻	H10-7431-12	POLYSTYRENE FOAMED FIXTURE(R)	M3X3E3	
-		✻	H10-7432-02	POLYSTYRENE FOAMED FIXTURE(L)	T1	
-			H10-7432-02	POLYSTYRENE FOAMED FIXTURE(L)	T3	
-			H10-7433-02	POLYSTYRENE FOAMED FIXTURE(R)	T1	

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❸

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
-			H10-7433-02	POLYSTYRENE FOAMED FIXTURE(R)	T3	
-			H12-2339-04	PACKING FIXTURE		
-			H13-0152-14	CARTON BOARD	X1	
-			H13-0152-14	CARTON BOARD	X3	
-			H13-0163-04	CARTON BOARD	T1	
-			H13-0163-04	CARTON BOARD	T3	
-			H20-0568-04	PROTECTION COVER	M1	
-			H20-0568-04	PROTECTION COVER	M3	
-			H21-0303-04	PROTECTION SHEET		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	E2	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	E4	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	K1P1Y1	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	K3P3Y3	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	M1X1E1	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	M3X3E3	
-			H25-0651-04	PROTECTION BAG (0232 PRINT)	T1	
-			H25-0651-04	PROTECTION BAG (0232 PRINT)	T3	
-			H25-0661-04	PROTECTION BAG	E2	
-			H25-0661-04	PROTECTION BAG	E4	
-			H25-0661-04	PROTECTION BAG	K1P1Y1	
-			H25-0661-04	PROTECTION BAG	K3P3Y3	
-			H25-0661-04	PROTECTION BAG	X1T1E1	
-			H25-0661-04	PROTECTION BAG	X3T3E3	
-		✻	H50-2776-04	ITEM CARTON CASE	Y1X1E1	
-		✻	H50-2777-04	ITEM CARTON CASE	M1	
-		✻	H50-2778-04	ITEM CARTON CASE	T1	
-		✻	H50-2779-04	ITEM CARTON CASE	K1P1	
-		✻	H50-2780-04	ITEM CARTON CASE	Y3X3E3	
-		✻	H50-2781-04	ITEM CARTON CASE	M3	
-		✻	H50-2782-04	ITEM CARTON CASE	T3	
-		✻	H50-2783-04	ITEM CARTON CASE	K3P3	
-		✻	H50-3069-04	ITEM CARTON CASE	E2	
-		✻	H50-3070-04	ITEM CARTON CASE	E4	
630	2E		J02-1167-03	FOOT	E1E2	
630	2E		J02-1167-03	FOOT	E3E4	
630	2E		J02-1167-03	FOOT	M1X1T1	
630	2E		J02-1167-03	FOOT	M3X3T3	
630	2E	✻	J02-1405-03	FOOT (D=46,H=14.5,T)	K1P1Y1	
630	2E	✻	J02-1405-03	FOOT (D=46,H=14.5,T)	K3P3Y3	
631	2D		J21-3326-05	JACK MOUNTING HARDWARE	E1E2	
631	2D		J21-3326-05	JACK MOUNTING HARDWARE	K1P1Y1	
631	2D		J21-3326-05	JACK MOUNTING HARDWARE	M1X1T1	
⚠ 633	1E		J42-0083-05	POWER CORD BUSHING		
634	1C	✻	J90-0851-04	GUIDE		
-			J61-0307-05	WIRE BAND	T1E1E2	
-			J61-0307-05	WIRE BAND	T3E3E4	
-			J61-0307-05	WIRE BAND	Y1M1X1	
-			J61-0307-05	WIRE BAND	Y3M3X3	
640	1C	✻	K27-2258-04	KNOB (BUTTON) POWER	K1P1Y1	
640	1C	✻	K27-2258-04	KNOB (BUTTON) POWER	K3P3Y3	
640	1C	✻	K27-2295-04	KNOB (BUTTON) POWER	E1E2	
640	1C	✻	K27-2295-04	KNOB (BUTTON) POWER	E3E4	
640	1C	✻	K27-2295-04	KNOB (BUTTON) POWER	M1X1T1	
640	1C	✻	K27-2295-04	KNOB (BUTTON) POWER	M3X3T3	

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❹

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
641	1D	✻	K29-6908-02	KNOB	K1P1Y1	
641	1D	✻	K29-6908-02	KNOB	K3P3Y3	
641	1D	✻	K29-7331-02	KNOB	E1E2	
641	1D	✻	K29-7331-02	KNOB	E3E4	
641	1D	✻	K29-7331-02	KNOB	M1X1T1	
641	1D	✻	K29-7331-02	KNOB	M3X3T3	
⚠ 645	1E		L07-2297-05	POWER TRANSFORMER	K1P1	
⚠ 645	1E		L07-2297-05	POWER TRANSFORMER	K3P3	
⚠ 645	1E		L07-2298-05	POWER TRANSFORMER	E2	
⚠ 645	1E		L07-2298-05	POWER TRANSFORMER	E4	
⚠ 645	1E		L07-2298-05	POWER TRANSFORMER	X1T1E1	
⚠ 645	1E		L07-2298-05	POWER TRANSFORMER	X3T3E3	
⚠ 645	1E		L07-2299-05	POWER TRANSFORMER	Y1M1	
⚠ 645	1E		L07-2299-05	POWER TRANSFORMER	Y3M3	

CD PLAYER UNIT (X32-363X-XX)

C1			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C2			CK45FF1H473Z	CERAMIC	0.047UF	Z		
C3			CF92FV1H124J	MF-C	0.12UF	J		
C4			CC45FSL1H470J	CERAMIC	47PF	J		
C5			CE04LW1A101M	ELECTRO	100UF	10WV		
C6			CF92FV1H124J	MF-C	0.12UF	J		
C7 ,8			CQ93FMG1H104J	MYLAR	0.10UF	J		
C9			CK45FF1H473Z	CERAMIC	0.047UF	Z		
C10			CC45FSL1H221J	CERAMIC	220PF	J		
C11			CK45FB1H102K	CERAMIC	1000PF	K		
C12			CE04LW1C100M	ELECTRO	10UF	16WV		
C13			CQ93FMG1H393J	MYLAR	0.039UF	J		
C14			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C15			CC45FSL1H151J	CERAMIC	150PF	J		
C16			CE04HW1E100M	NP-ELEC	10UF	25WV		
C17			CK45FB1H102K	CERAMIC	1000PF	K		
C18 ,19			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C20			CQ93FMG1H333J	MYLAR	0.033UF	J		
C21			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C22			CK45FB1H222K	CERAMIC	2200PF	K		
C23			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C25			CC45FSL1H180J	CERAMIC	18PF	J		
C26 ,27			CE04LW1A101M	ELECTRO	100UF	10WV		
C28			CQ93FMG1H333J	MYLAR	0.033UF	J		
C29			CQ93FMG1H473J	MYLAR	0.047UF	J		
C30			CK45FB1H152K	CERAMIC	1500PF	K		
C31			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C32			CK45FB1H332K	CERAMIC	3300PF	K		
C33			CF92FV1H124J	MF-C	0.12UF	J		
C34 ,35			CK45FB1H102K	CERAMIC	1000PF	K		
C36			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C37			CE04LW1A101M	ELECTRO	100UF	10WV		
C38			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C39			CE04LW1A101M	ELECTRO	100UF	10WV		
C40 ,41			CQ93FMG1H473J	MYLAR	0.047UF	J		
C42			CE04LW0J331M	ELECTRO	330UF	6.3WV		
C43			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C44			CC45FSL1H220J	CERAMIC	22PF	J		
C45 ,46			CE04LW1A101M	ELECTRO	100UF	10WV		

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C47 ,48			CQ93FMG1H821J	MYLAR	820PF	J		
C49 ,50			CQ93FMG1H162J	MYLAR	1600PF	J		
C51 ,52			CE04LW1C470M	ELECTRO	47UF	16WV		
C53 ,54			CQ93FMG1H821J	MYLAR	820PF	J		
C55			CE04LW1A101M	ELECTRO	100UF	10WV		
C56			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C57			CK45FF1H103Z	CERAMIC	0.010UF	Z	E1E2	
C57			CK45FF1H103Z	CERAMIC	0.010UF	Z	K1P1Y1	
C57			CK45FF1H103Z	CERAMIC	0.010UF	Z	M1X1T1	
C58			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C59 ,60			CE04LW1H2R2M	ELECTRO	2.2UF	50WV	E1E2	
C59 ,60			CE04LW1H2R2M	ELECTRO	2.2UF	50WV	K1P1Y1	
C59 ,60			CE04LW1H2R2M	ELECTRO	2.2UF	50WV	M1X1T1	
C61 ,62			CE04LW0J221M	ELECTRO	220UF	6.3WV	E1E2	
C61 ,62			CE04LW0J221M	ELECTRO	220UF	6.3WV	K1P1Y1	
C61 ,62			CE04LW0J221M	ELECTRO	220UF	6.3WV	M1X1T1	
C63			CK45FF1H473Z	CERAMIC	0.047UF	Z		
C65 ,66			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C67			CC45FSL1H101J	CERAMIC	100PF	J		
C68 ,69			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C70			CE04LW1C222M	ELECTRO	2200UF	16WV		
C71			CE04LW1H221M	ELECTRO	220UF	50WV		
C72			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C73			CE04LW1H100M	ELECTRO	10UF	50WV		
C74			CE04LW1A101M	ELECTRO	100UF	10WV		
C75			CE04LW1H4R7M	ELECTRO	4.7UF	50WV		
C76			CQ93FMG1H473J	MYLAR	0.047UF	J		
C77 ,78			CC45FSL1H221J	CERAMIC	220PF	J		
C79			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C80			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C81			CE04LW1C101M	ELECTRO	100UF	16WV		
C82 ,83			CQ93FMG1H471J	MYLAR	470PF	J	E1E2	
C82 ,83			CQ93FMG1H471J	MYLAR	470PF	J	K1P1Y1	
C82 ,83			CQ93FMG1H471J	MYLAR	470PF	J	M1X1T1	
C84 ,85			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C86			CE04LW1A101M	ELECTRO	100UF	10WV		
C87			CC45FSL1H101J	CERAMIC	100PF	J		
C88			CK45FF1H473Z	CERAMIC	0.047UF	Z		
C89			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C96			CQ93FMG1H104J	MYLAR	0.10UF	J		
C99			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C100			CC45FSL1H101J	CERAMIC	100PF	J		
C106			CK45FF1H473Z	CERAMIC	0.047UF	Z		
C109,110			CK45FF1H103Z	CERAMIC	0.010UF	Z	E1E2	
C109,110			CK45FF1H103Z	CERAMIC	0.010UF	Z	K1P1Y1	
C109,110			CK45FF1H103Z	CERAMIC	0.010UF	Z	M1X1T1	
C113			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C114			CE04LW1C101M	ELECTRO	100UF	16WV		
C117			CE04LW1C331M	ELECTRO	330UF	16WV	E1E2	
C117			CE04LW1C331M	ELECTRO	330UF	16WV	K1P1Y1	
C117			CE04LW1C331M	ELECTRO	330UF	16WV	M1X1T1	
C118			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C119			CE04LW1A101M	ELECTRO	100UF	10WV		
C120			CE04LW1C221M	ELECTRO	220UF	16WV		
C121			CK45FF1H103Z	CERAMIC	0.010UF	Z		

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C201			CK45FF1H103Z	CERAMIC	0.010UF	Z			
C202			CE04LW1A101M	ELECTRO	100UF	10WV		E1E2	
C202			CE04LW1A101M	ELECTRO	100UF	10WV		K1P1Y1	
C202			CE04LW1A101M	ELECTRO	100UF	10WV		M1X1T1	
CN1			E40-8037-05	FLAT CABLE CONNECTOR					
CN2			E40-4876-05	PIN ASSY					
CN3			E40-3250-05	PIN ASSY					
CN4			E40-3252-05	PIN ASSY					
CN5			E40-4932-05	FLAT CABLE CONNECTOR					
CN7			E40-4245-05	PIN ASSY					
CN8			E40-4924-05	FLAT CABLE CONNECTOR					
CN9			E40-4962-05	FLAT CABLE CONNECTOR					
CN10			E40-4932-05	FLAT CABLE CONNECTOR					
J1			E63-0122-05	PHONO JACK					
J2			E11-0293-05	MINIATURE PHONE JACK(2P)					
J3			E11-0272-05	PHONE JACK				E1E2	
J3			E11-0272-05	PHONE JACK				K1P1Y1	
J3			E11-0272-05	PHONE JACK				M1X1T1	
-			J19-3647-14	HOLDER					
E11			J11-0808-05	WIRE CLAMPER					
E12			J11-0808-05	WIRE CLAMPER				E1E2	
E12			J11-0808-05	WIRE CLAMPER				K1P1Y1	
E12			J11-0808-05	WIRE CLAMPER				M1X1T1	
E13			J11-0808-05	WIRE CLAMPER					
L1			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)					
L2 ,3			L40-1091-17	SMALL FIXED INDUCTOR				E1E2	
L2 ,3			L40-1091-17	SMALL FIXED INDUCTOR				K1P1Y1	
L2 ,3			L40-1091-17	SMALL FIXED INDUCTOR				M1X1T1	
L4 -6			L92-0018-05	FERRITE CORE					
L7			L92-0017-05	FERRITE CORE					
X1			L78-0299-05	RESONATOR	(16.93M)				
⚠ R111			RD14NB2E101J	RD	100	J	1/4W		
⚠ R131,132			RS14KB3D181J	FL-PROOF RS	180	J	2W		
R142			RS14KB3A101J	FL-PROOF RS	100	J	1W		
⚠ R165			RD14NB2E1R0J	RD	1	J	1/4W		
⚠ R168			RD14NB2E101J	RD	100	J	1/4W		
⚠ R170			RD14NB2E1R0J	RD	1	J	1/4W		
⚠ R171-173			RS14KB3D181J	FL-PROOF RS	180	J	2W		
⚠ R174			RD14NB2E101J	RD	100	J	1/4W		
VR1			R12-3687-05	TRIMMING POT.(33K)					
VR2			R12-5651-05	TRIMMING POT.(100K)					
VR3			R12-3687-05	TRIMMING POT.(33K)					
⚠ S1			S31-2131-05	SLIDE SWITCH (POWER TYPE)				Y1M1	
⚠ S1			S31-2131-05	SLIDE SWITCH (POWER TYPE)				Y3M3	
S2			S31-2132-05	SLIDE SWITCH					
S3 -22			S70-0031-05	TACT SWITCH					
S23			S40-2351-05	PUSH SWITCH					
PH1			T95-0145-05	OPTO ISOLATOR					
D1 -10			HSS104	DIODE					
D1 -10			1SS133	DIODE					
⚠ D13			D3SBA20F03	DIODE					
⚠ D14			S5688B	DIODE					

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
⚠ D14			1SR139-400	DIODE		
D15			MTZJ30(B)	ZENER DIODE		
D15			UZ-30BS	ZENER DIODE		
D16			MTZJ5.6(B)	ZENER DIODE		
D16			UZ-5.6BSB	ZENER DIODE		
D17			MTZJ4.7(B)	ZENER DIODE		
D17			UZ-4.7BSB	ZENER DIODE		
D18			MTZJ5.6(B)	ZENER DIODE		
D18			UZ-5.6BSB	ZENER DIODE		
D19 -22			HSS104	DIODE		
D19 -22			1SS133	DIODE		
D23			MTZJ8.2(B)	ZENER DIODE		
D23			UZ-8.2BSB	ZENER DIODE		
D26			MTZJ10(B)	ZENER DIODE		
D26			UZ-10BSB	ZENER DIODE		
D28			HSS104	DIODE		
D28			1SS133	DIODE		
D201-206			HSS104	DIODE		
D201-206			1SS133	DIODE		
D207			HSS104	DIODE	E3E4	
D207			HSS104	DIODE	K3P3Y3	
D207			HSS104	DIODE	M3X3T3	
D207			1SS133	DIODE	E3E4	
D207			1SS133	DIODE	K3P3Y3	
D207			1SS133	DIODE	M3X3T3	
D208			SIR-33ST3	INFRARED LED		
ED1			10-BT-131GK	INDICATOR TUBE		
IC1			CXA1782BQ*1	ANALOGUE IC		
IC2			CXD2507AQ*1	MOS-IC		
IC3			UPD78044FGF023	MI-COM IC		
IC4			LA6541D	ANALOGUE IC		
IC5			TC9293AF	MOS-IC		
⚠ IC6			ICP-N20	ANALOGUE IC	T1E1E2	
⚠ IC6			ICP-N20	ANALOGUE IC	T3E3E4	
⚠ IC6			ICP-N20	ANALOGUE IC	Y1M1X1	
⚠ IC6			ICP-N20	ANALOGUE IC	Y3M3X3	
IC7			NJM4580D	IC(OP AMP X2)	E1E2	
IC7			NJM4580D	IC(OP AMP X2)	K1P1Y1	
IC7			NJM4580D	IC(OP AMP X2)	M1T1X1	
IC8 ,9			TA8409S	MOS-IC		
IC12			NJM4565D	ANALOGUE IC		
PH2			RPT-38PT3F	PHOTO TRANSISTOR		
Q1			2SC1740S(Q,R)	TRANSISTOR		
Q1			2SC2785(F,E)	TRANSISTOR		
Q2			DTA124ESA	DIGITAL TRANSISTOR		
Q2			UN4112	DIGITAL TRANSISTOR		
Q3			2SA954(L,K)	TRANSISTOR		
Q4 ,5			DTC113ZSA	DIGITAL TRANSISTOR		
Q4 ,5			UN4219	DIGITAL TRANSISTOR		
Q6			DTC124ESA	DIGITAL TRANSISTOR		
Q6			UN4212	DIGITAL TRANSISTOR		
Q7 ,8			2SC2878(B)	TRANSISTOR		
⚠ Q9			2SD2012	TRANSISTOR		
⚠ Q10			2SA1534A	TRANSISTOR		
Q12			DTA124ESA	DIGITAL TRANSISTOR		

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Q12			UN4112	DIGITAL TRANSISTOR		
⚠ Q13			2SA992(F,E)	TRANSISTOR		
⚠ Q14			2SD2012	TRANSISTOR		
A1			W02-2537-05	ELECTRIC CIRCUIT MODULE	E1E2	
A1			W02-2537-05	ELECTRIC CIRCUIT MODULE	K1P1Y1	
A1			W02-2537-05	ELECTRIC CIRCUIT MODULE	M1X1T1	
MECHANISM ASSY (X92-2100-21/X92-2120-10)						
1	3B	✻	A10-3360-01	CHASSIS		
2	1A	✻	A11-1126-02	SUB CHASSIS		
3	1A	✻	A11-1127-12	SUB CHASSIS		
5	2B	✻	B09-0255-04	CAP		
7	2A	✻	D10-3740-13	ARM		
8	2B	✻	D10-3741-02	SLIDER		
9	1B	✻	D13-1829-04	GEAR		
10	2A	✻	D13-1830-14	GEAR		
11	2A	✻	D13-1831-04	GEAR		
12	2D	✻	D13-1833-04	WORM		
13	2C	✻	D13-1832-04	GEAR		
14	2C,2E	✻	D14-0389-04	ROLLER		
16	2A		D15-0407-04	MOTOR PULLEY		
17	1A		D16-0355-03	BELT		
18	2A		D21-1763-14	SHAFT		
19	1B		D10-3606-08	ROD		
20	1B		D13-1720-08	GEAR		
25	3D		E35-0747-25	FLAT CABLE (7P)		
26	1D		E35-1317-05	FLAT CABLE (16P)		
28	2B		E40-3264-05	PIN ASSY		
29	2B		E35-1669-05	WIRING HARNESS		
35	2C		G01-3630-14	COMPRESSION SPRING		
36	2B		G01-3753-04	COMPRESSION SPRING		
37	2B		G01-3754-04	COMPRESSION SPRING		
38	3A		G02-1049-04	FLAT SPRING		
39	3D		G09-0634-04	WIRE SPRING		
41	2D	✻	G02-1631-04	FLAT SPRING		
-			G10-0146-04	NON-WOVEN FABRIC		
43	2B		J02-1121-04	INSULATOR		
44	1A		J11-0830-03	CLAMPER		
45	3D	✻	J19-5818-04	HOLDER		
46	2A	✻	J90-0851-04	GUIDE		
47	2E	✻	J90-0852-02	GUIDE		
48	3C	✻	J99-0801-01	TRAY		
49	2C	✻	J99-0596-01	TRAY		
55	2A,3A		S33-2061-05	LEVER SWITCH		
56	2B		S74-0038-08	LEAF SWITCH		
64	1A		T99-0544-15	MAGNET		
DM	1B		A11-1082-08	DISC MOTOR ASSY		
FM	2B		T42-0817-08	FEED MOTOR		
LM	3A		T42-0524-05	DC MOTOR		
PU	1B		T25-0055-08	OPTICAL PICKUP HEAD		
RM	3D		T42-0670-15	DC MOTOR		

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CD-203/204/DPF-R3010/R3010E/R4010/R4010E

SPECIFICATIONS

CD-204/203/DPF-R4010/3010

[Format]

System ..... Compact disc digital audio system
Laser ..... Semiconductor laser

[D/A Convertors]

D/A Conversion ..... 1 Bit
Oversampling ..... 8 fs (352.8 kHz)

[Audio]

Frequency response ..... 4 Hz – 20 kHz, ±0.5 dB
Signal to noise ratio ..... More than 95 dB
Dynamic range ..... More than 95 dB
Total harmonic distortion + noise
..... Less than 0.008% (at 1 kHz)
Wow & flutter ..... Unmeasurable Limit
Output level/impedance
Fixed (CD-203/DPF-R3010) ..... 2 V/0.8 kΩ
Variable (CD-204/DPF-R4010) ..... (Max.) 2 V/0.3 kΩ
Headphone output (Max.)
(CD-204/DPF-R4010 only) ..... 20 mW (32 Ω)

[General]

Power consumption ..... 13 W
Dimensions ..... W: 440 mm (17-5/16")
H : 125 mm (4-15/16")
D : 397 mm (15-5/8")
Weight (Net) ..... 5.0 kg (11.0 lb)

Notes

1. KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.
2. The full performance may not be exhibited in an extremely cold location (under a water-freezing temperature).

Note:
Component and circuit are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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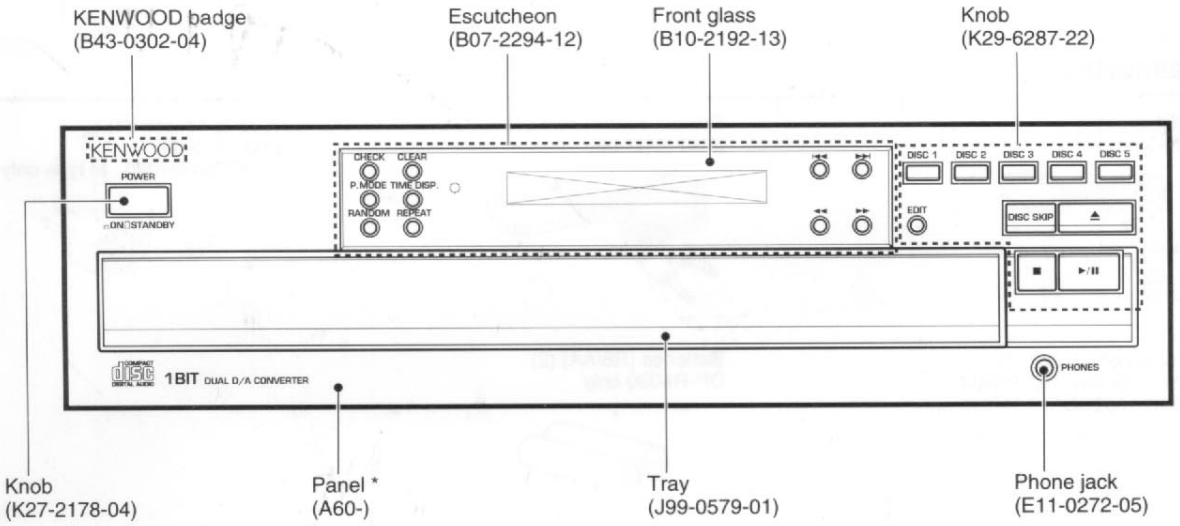
573/111 Soi Ramkhamhaeng 39, Ramkhamhaeng Road, Wangthonglang, Bangkapi, Bankok 10301 Thailand

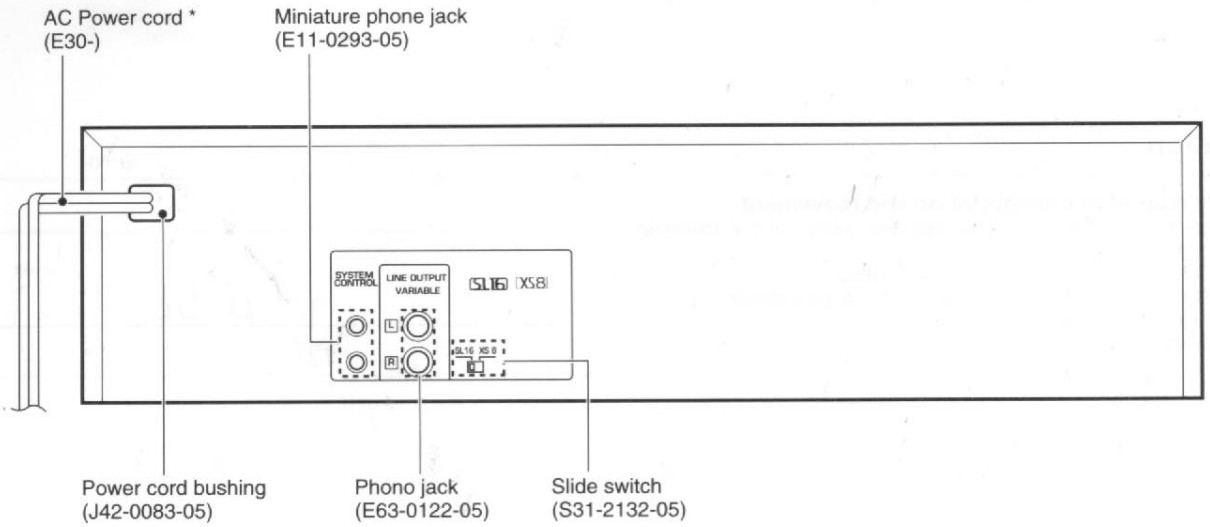
MULTIPLE CD PLAYER

103CD/104CD/1050CD
DP-R797/R3090/R4090
SERVICE MANUAL

KENWOOD

© 1997-01/B51-5269-00 (K/K) 3795





In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

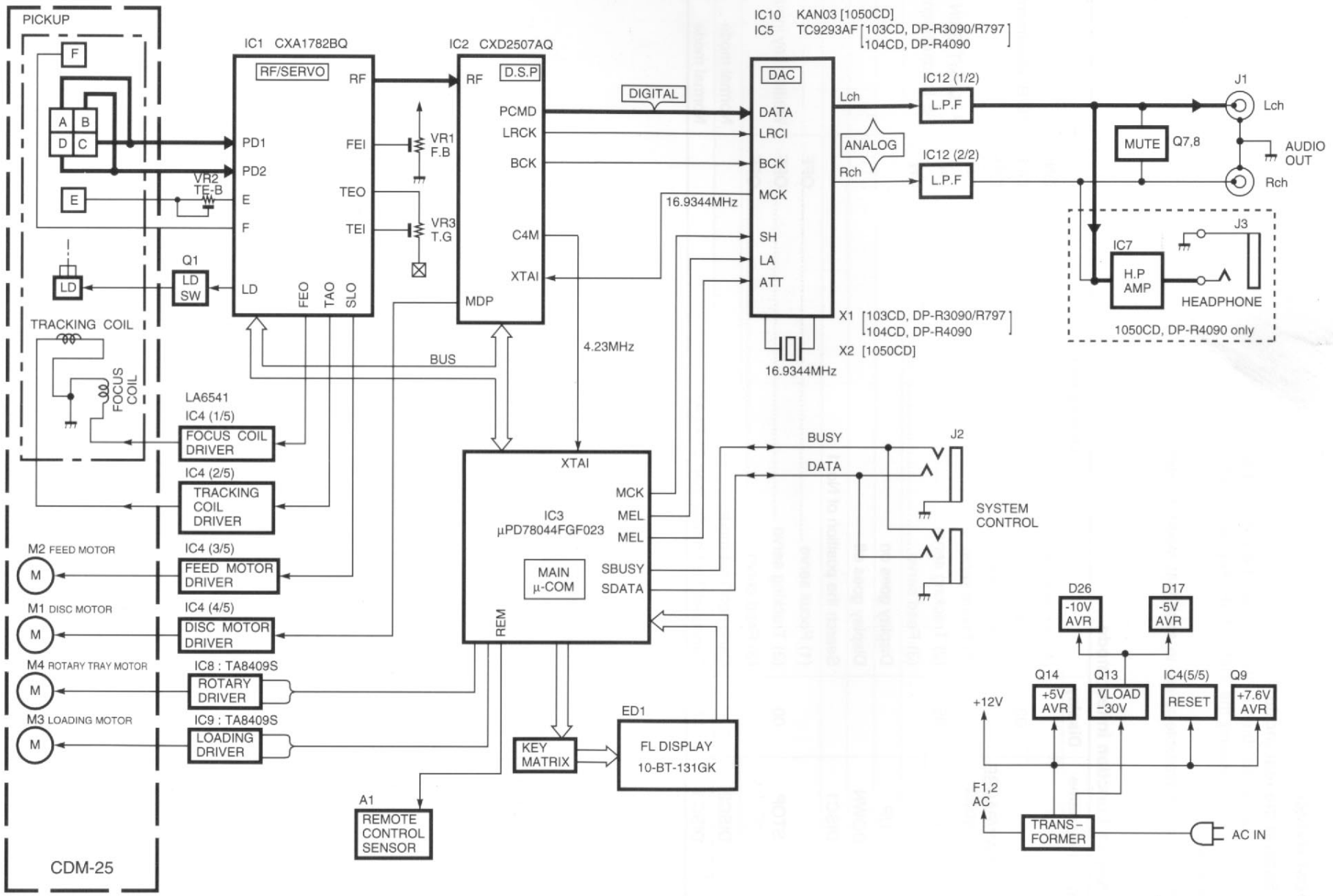
KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

DANGER : Laser radiation when open and interlock defeated.
AVOID DIRECT EXPOSURE TO BEAM.

Illust is DP-R4090.

*** Refer to parts list on page 19.**

103CD/104CD/1050CD/DP-R797/R3090/R4090
BLOCK DIAGRAM

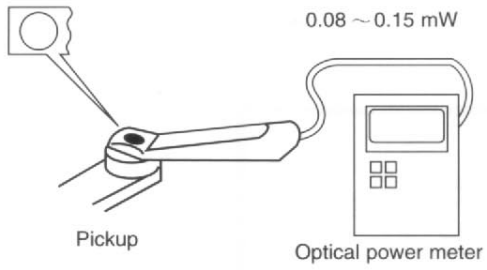


ADJUSTMENT

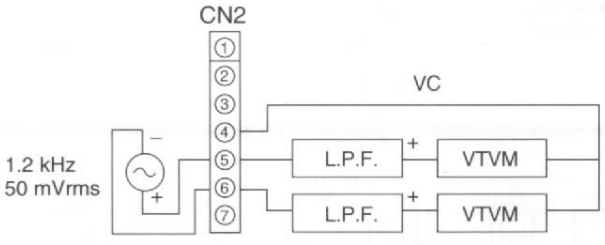
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	PLAYER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Open the tray (Normal mode), then turn the power off.							
1	LASER POWER	–	Apply the sensor section of optical power meter on the pickup lens.	While pressing the TIME DISP. key, turn the AC ON. (Test mode) Press the PLAY/PAUSE key, then confirm that the display is "03".	–	On the power from 0.08 to 0.15 mW, when the diffraction grating is correctly aligned with the RF level of 1.0 Vp-p or more.	(a)
1. Press the STOP key. 2. Press the OPEN key. 3. Load a disc, then press the CLOSE key. 4. Press the PLAY key. 5. Press the OPEN key to open the tray. 6. Turn the power off. (Player stops as the tray is opened while the disc clamped.) 7. While pressing the TIME DISP. key, turn the power ON to enter the Test mode.							
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6)	Press the PLAY/PAUSE key, then confirm that the display is "03".	TE BALANCE VR2	Symmetry between upper and lower patterns	(c)
3	FOCUS ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6)	Press the PLAY/PAUSE key, then confirm that the display is "05".	FE BALANCE VR1	Optimum eye pattern	(b) or (d)
4	TRACKING GAIN	Test disc Type 4 Apply signal of 1.2 kHz, 50mVrms to CN2 pin 5-6.	Connect a LPF to CN2 pin 5-6 to which you connect an oscilloscope or AC voltmeters.	Press the PLAY/PAUSE key, then confirm that the display is "05".	TRACKING GAIN VR3	Two VTVMs should read the same value.	(e)

Note:
Type 4 disc : SONY YEDS-18 Test Disc or equivalent.
LPF: Around 47 kΩ+ 390 pF or so.
Step 1~4 are in Test Mode.

(a) Laser power



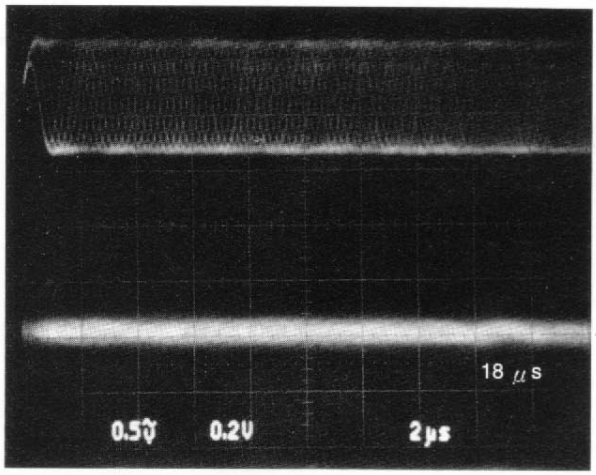
(e) Tracking gain



ADJUSTMENT

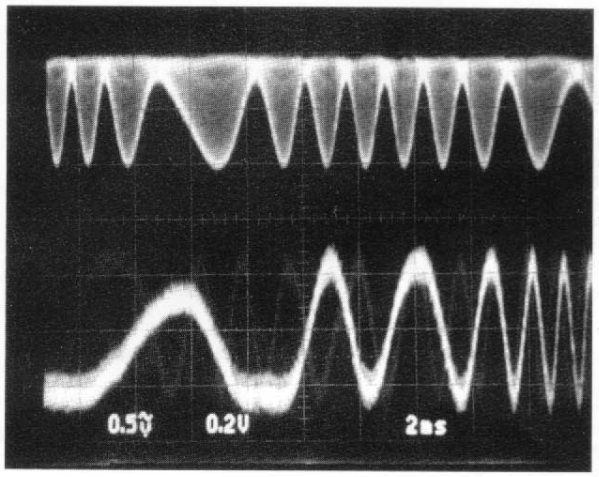
FIG.
(a)
(c)
(b) or (d)
(e)

FIG. (b)



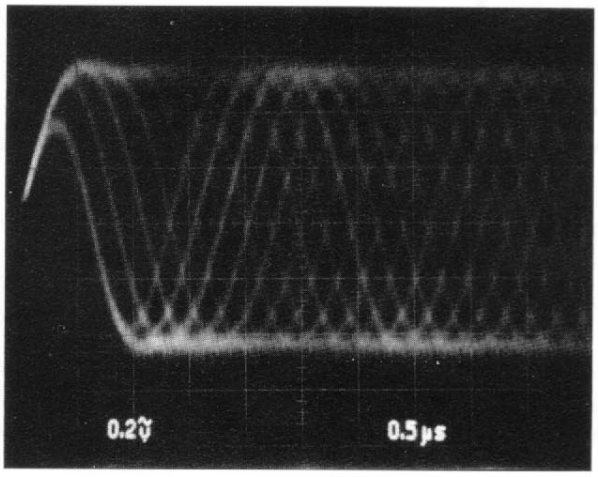
- RF signal and TE signal in test mode (PLAY).
- If the diffraction grating has been adjusted correctly, the influence of triggering is observed on the TE waveform of approx. 18 μs from RF signal trigger point, in the form of a projection.

FIG. (c)



- RF signal and TE signal in test mode (Focusing servo ON / Tracking servo OFF). (Disc Type 4)
- Adjust TE signal so that the waveform is symmetrical in relation to VC. (TE BALANCE)

FIG. (d)



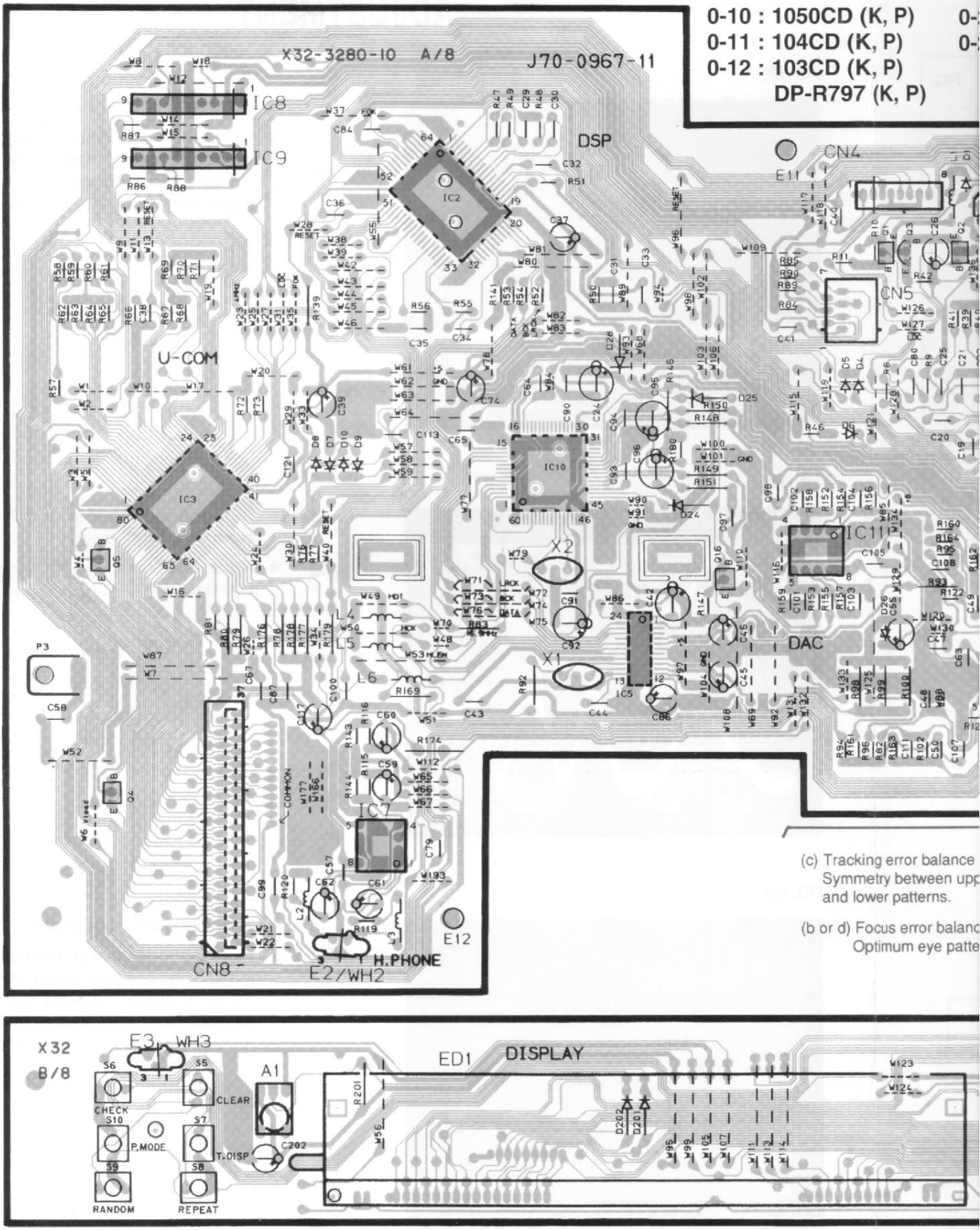
- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset are focused into one point on the display. The crossing points above and below the center shall also be looked clearly.

  (FE BALANCE)

PC BOARD(Component side view)

CD player unit
X32-328X-XX

0-10 : 1050CD (K, P)
0-11 : 104CD (K, P)
0-12 : 103CD (K, P)
DP-R797 (K, P)



(c) Tracking error balance
Symmetry between upp
and lower patterns.

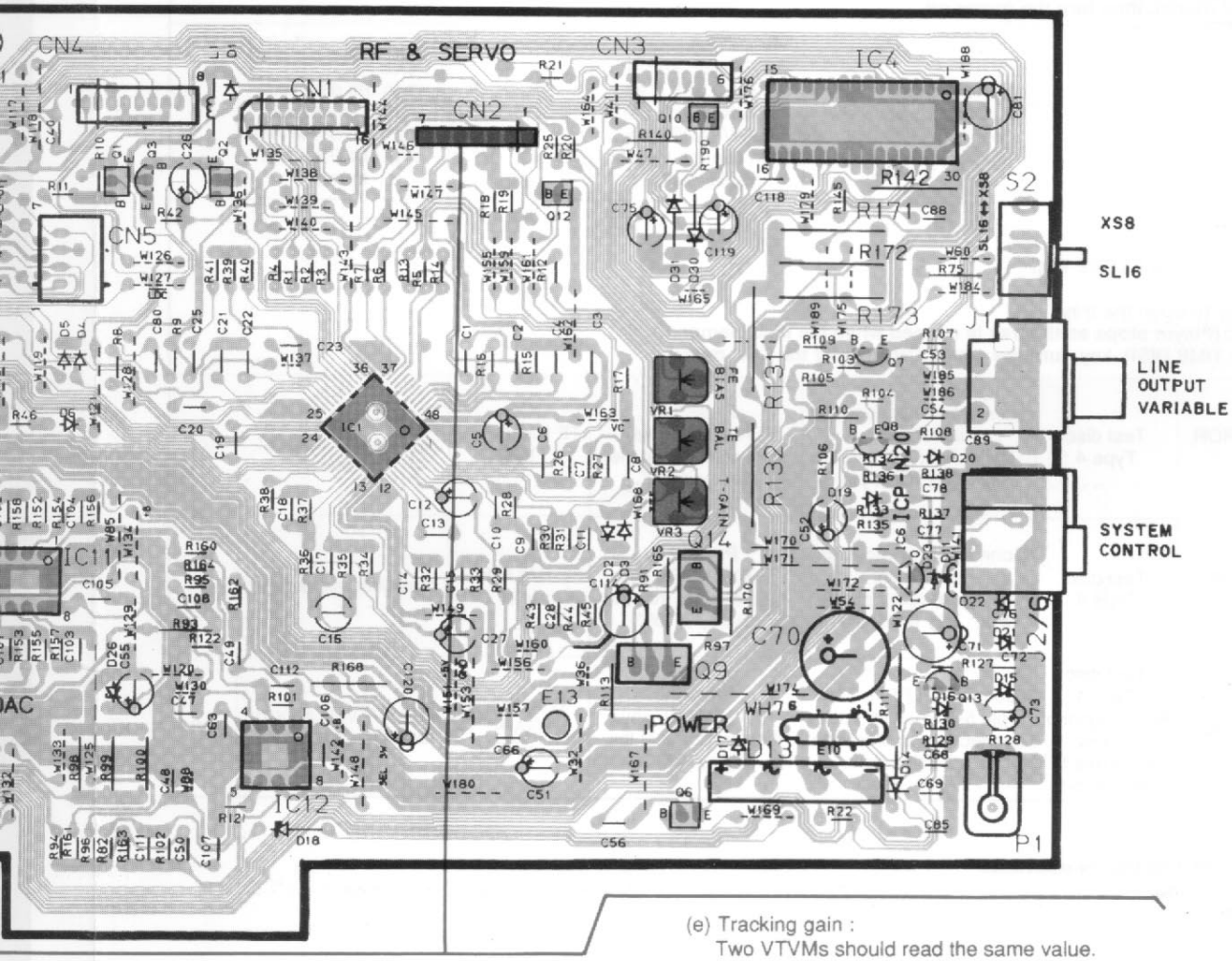
(b or d) Focus error balanc
Optimum eye patte

50CD (K, P)
04CD (K, P)
03CD (K, P)
P-R797 (K, P)

0-21 : 1050CD (Y)
0-22 : DP-R4090 (M)
104CD (Y)

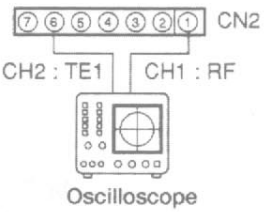
0-23 : DP-R3090 (M)
103CD (Y)
DP-R797 (Y)

2-71 : DP-R4090 (E, T, X)
2-72 : DP-R3090 (E, T, X)

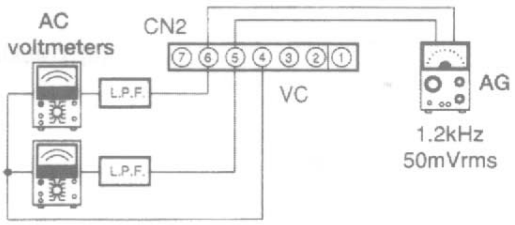


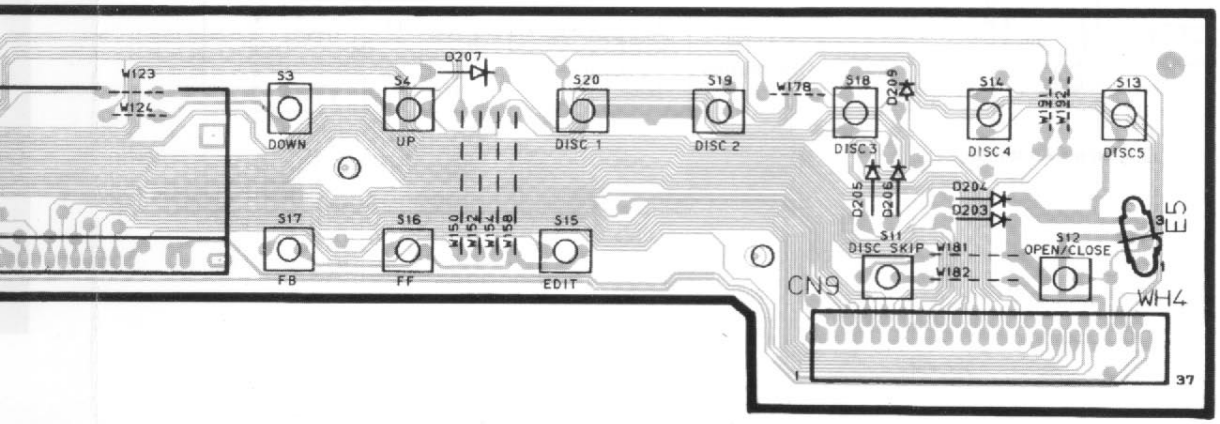
(c) Tracking error balance :
Symmetry between upper and lower patterns.

(b or d) Focus error balance :
Optimum eye pattern.



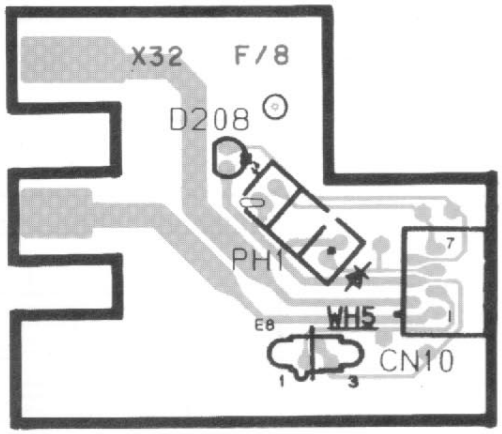
(e) Tracking gain :
Two VTVMs should read the same value.

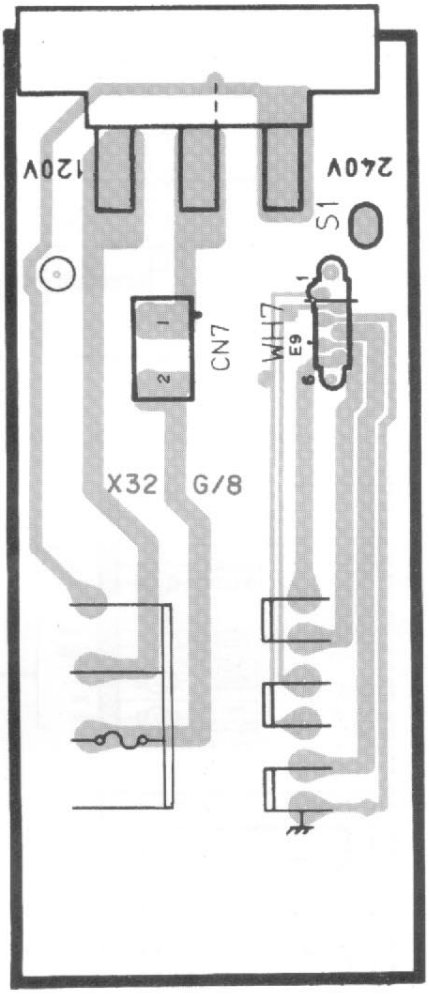


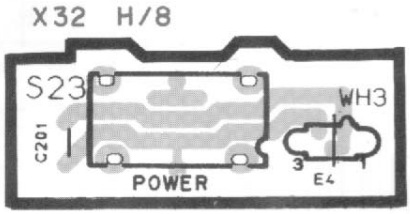


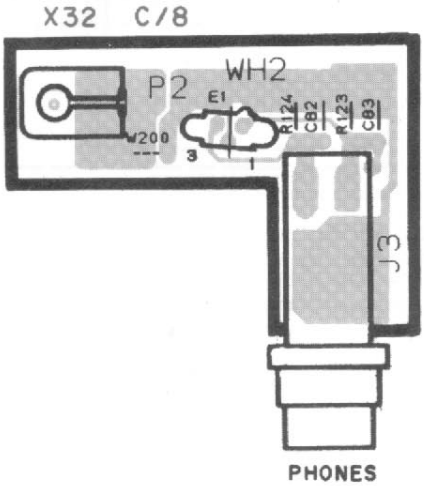
Refer to the schematic diagram for the value of resistors and capacitors.

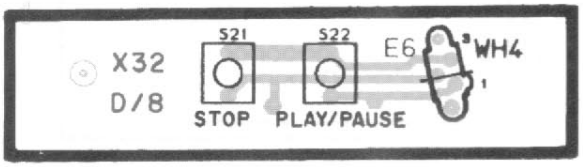
PC BOARD(Component side view)



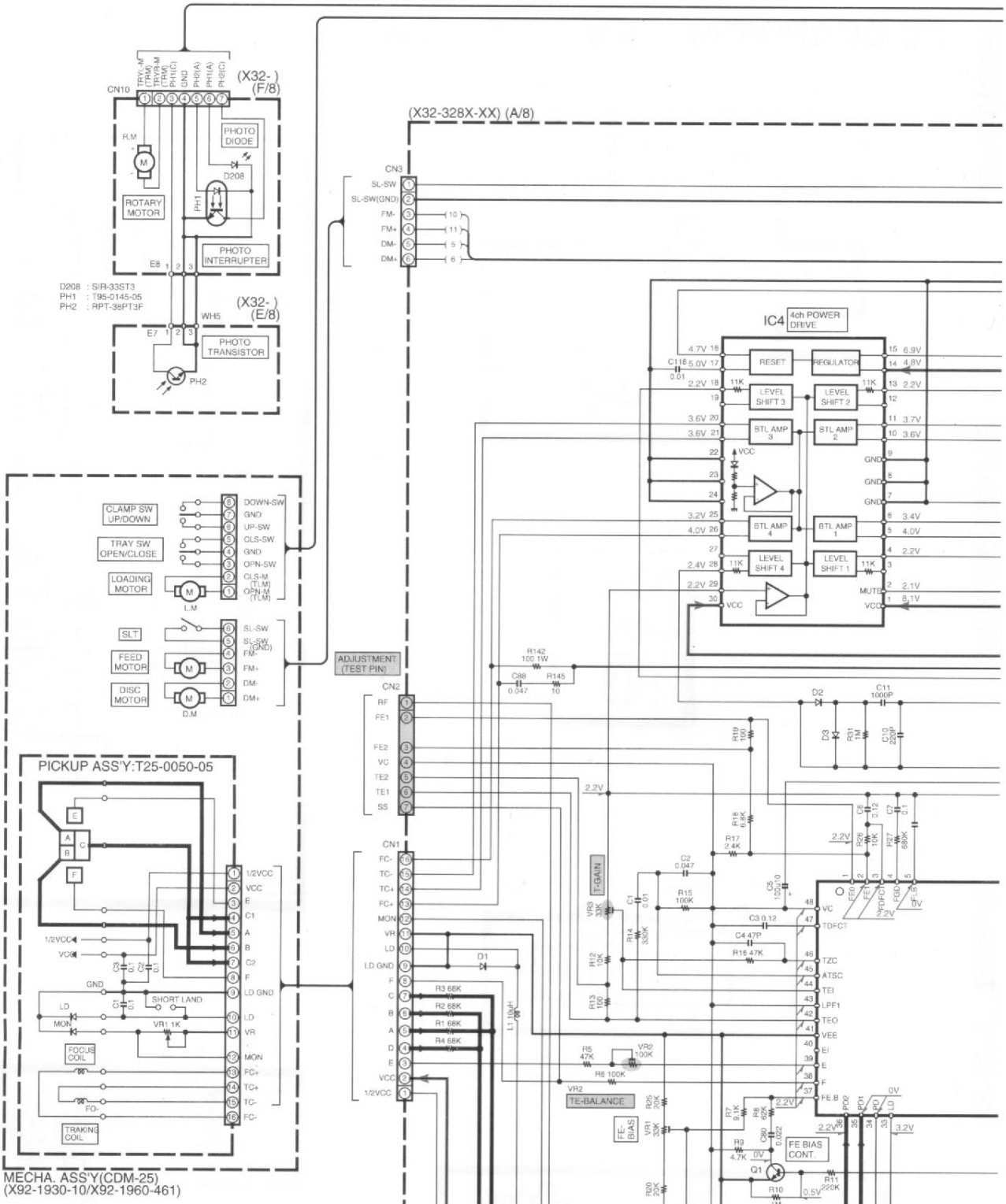








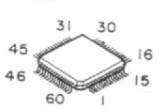
Refer to the schematic diagram for the value of resistors and capacitors.



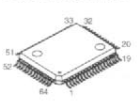
CAUTION: *For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.*

The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage dur ing PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP.

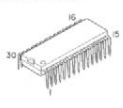
KAN03



CXD2507AQ*1

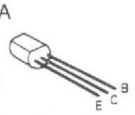


LA6541D



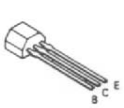
F G H I J

2SA1534A
2SA954
2SA992
2SC2878

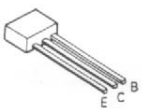


2SC2785

DTA124ESA
DTC124ESA
UN4112
2SC1740S



UN4212
UN4219



2SD2012

NJM4565D

TA84

J K L M N O

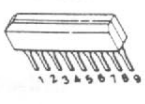
1050CD
X32-328X-XX

DESTINATION		UNIT No.	A	B	C	IC3	IC6	D11	D23	S1	C99	R91, 97	E12	W122	W141	W187
COUNTRY	ABB.															
U.S.A. CANADA	K P	0-10	YES	NO	YES	uPD78044FGF043	NO	YES	UZ-3.9BSB or MTZJ3.9(B)	NO	NO	180	YES	YES	NO	YES
PX	Y	0-21				uPD78044FGF023 or uPD78044FGF043	YES			YES				NO		NO

104CD
X32-328X-XX

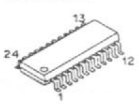
DESTINATION		UNIT No.	A	B	C	IC3	IC6	D11
COUNTRY	ABB.							
U.S.A. CANADA	K P	0-11	NO	YES	YES	uPD78044FGF023 or uPD78044FGF043	NO	NO
PX GENERAL MARKET	Y M	0-22					YES	
AUSTRALIA U.K. EUROPE	X T E	2-71						

TA8409S

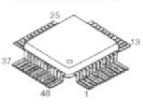


NJM4580D

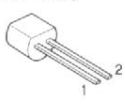
TC9293AF



CXA1782BQ*1



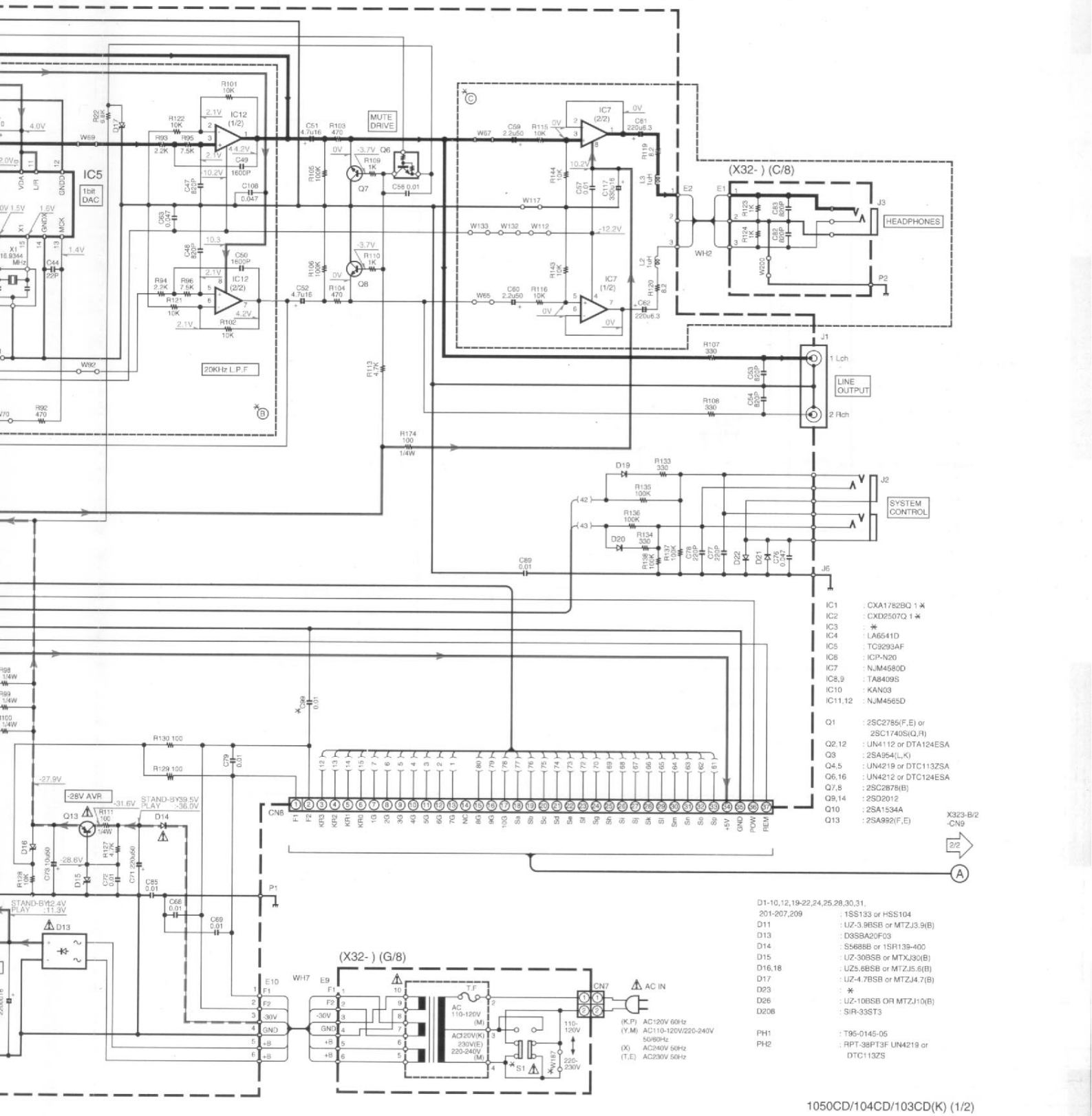
ICP-N20



B	C	IC3	IC6	D11	D23	S1	C99	R91, 97	E12	W122	W141	W187
			NO			NO				YES		YES
YES	YES	uPD78044FGF023 or uPD78044FGF043	YES	NO	UZ-8.2BSB or MTZJ8.2(B)	YES	YES	470	YES	NO	YES	NO
						NO						YES

103CD
X32-328X-XX

DESTINATION		UNIT	A	B	C	IC3	IC6	D11	D23	S1	C99	R91, 97	E12	W122	W141	W187
COUNTRY	ABB.	No.														
U.S.A.	K						NO			NO				YES		YES
CANADA	P	0-12								YES						NO
PX GENERAL MARKET	Y	0-23	NO	YES	NO	uPD78044FGF023 or uPD78044FGF043	YES	NO	UZ-8.2BSB or MTZJ8.2(B)		YES	470	NO	NO	YES	
	M															YES
AUSTRALIA	X	0-23								NO						
U.K.	T	2-72														
EUROPE	E															



IC1	: CXA1782BQ 1 ✳
IC2	: CXD2507Q 1 ✳
IC3	: ✳
IC4	: LA6541D
IC5	: TC9293AF
IC6	: ICP-N20
IC7	: NJM4580D
IC8,9	: TA8409S
IC10	: KAN03
IC11,12	: NJM4565D
Q1	: 2SC2785(F,E) or 2SC1740S(Q,R)
Q2,12	: UN4112 or DTA124ESA
Q3	: 2SA954(L,K)
Q4,5	: UN4219 or DTC113ZSA
Q6,16	: UN4212 or DTC124ESA
Q7,8	: 2SC2878(B)
Q9,14	: 2SD2012
Q10	: 2SA1534A
Q13	: 2SA992(F,E)

D1-10,12,19-22,24,25,28,30,31, 201-207,209	: 1SS133 or HSS104
D11	: UZ-3.9BSB or MTZJ3.9(B)
D13	: D3SBA20F03
D14	: S5688B or 1SR139-400
D15	: UZ-30BSB or MTXJ30(B)
D16,18	: UZ5.6BSB or MTZJ5.6(B)
D17	: UZ-4.7BSB or MTZJ4.7(B)
D23	: ✳
D26	: UZ-10BSB OR MTZJ10(B)
D208	: SIR-33ST3
PH1	: T95-0145-05
PH2	: RPT-38PT3F UN4219 or DTC113ZS

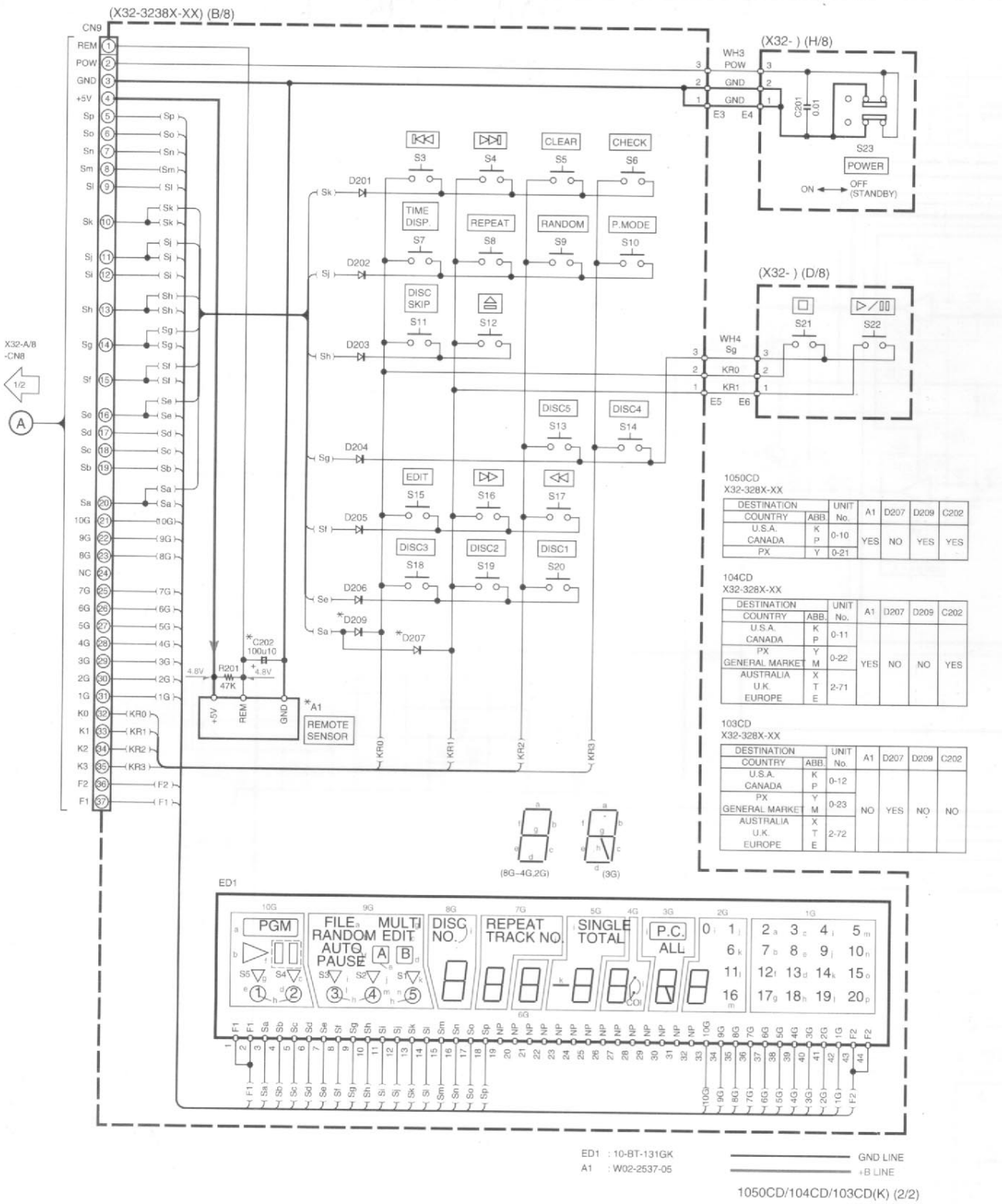
(K,P) AC120V 60Hz
(Y,M) AC110-120V/220-240V 50/60Hz
(X) AC240V 50Hz
(T,E) AC230V 50Hz

1050CD/104CD/103CD(K) (1/2)

103CD/104CD/1050CD/DP-R797/R3090/R4090

Y22-4870-10

KENWOOD



1050CD
X32-328X-XX

DESTINATION		UNIT	A1	D207	D209	C202
COUNTRY	ABB.	No.				
U.S.A.	K	0-10	YES	NO	YES	YES
CANADA	P					
PX	Y	0-21				

104CD
X32-328X-XX

DESTINATION		UNIT	A1	D207	D209	C202
COUNTRY	ABB.	No.				
U.S.A.	K	0-11	YES	NO	NO	YES
CANADA	P					
PX	Y	0-22				
GENERAL MARKET	M					
AUSTRALIA	X	2-71				
U.K.	T					
EUROPE	E					

103CD
X32-328X-XX

DESTINATION		UNIT	A1	D207	D209	C202
COUNTRY	ABB.	No.				
U.S.A.	K	0-12	NO	YES	NO	NO
CANADA	P					
PX	Y	0-23				
GENERAL MARKET	M					
AUSTRALIA	X	2-72				
U.K.	T					
EUROPE	E					

1050CD/104CD/103CD(K) (2/2)

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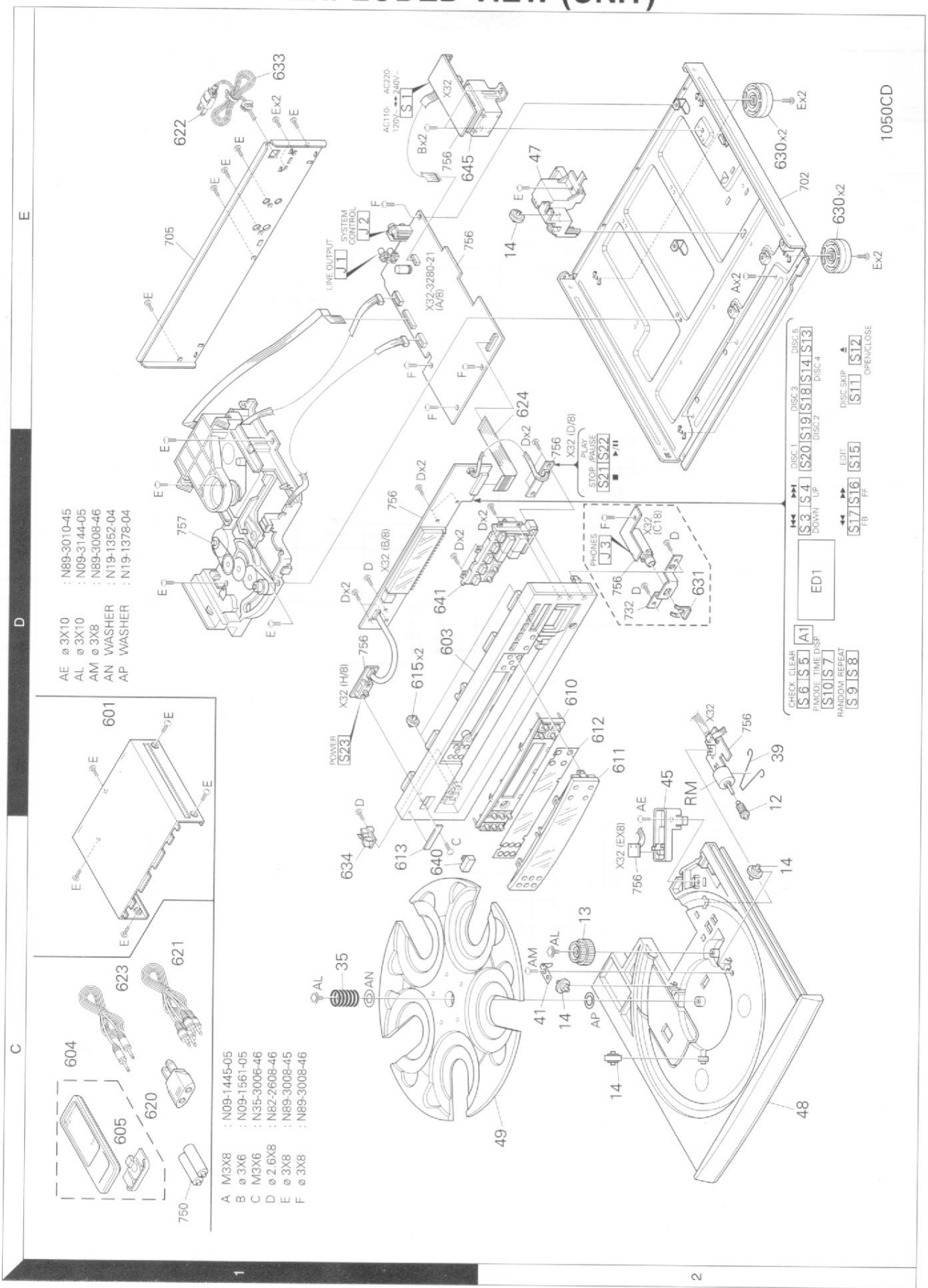
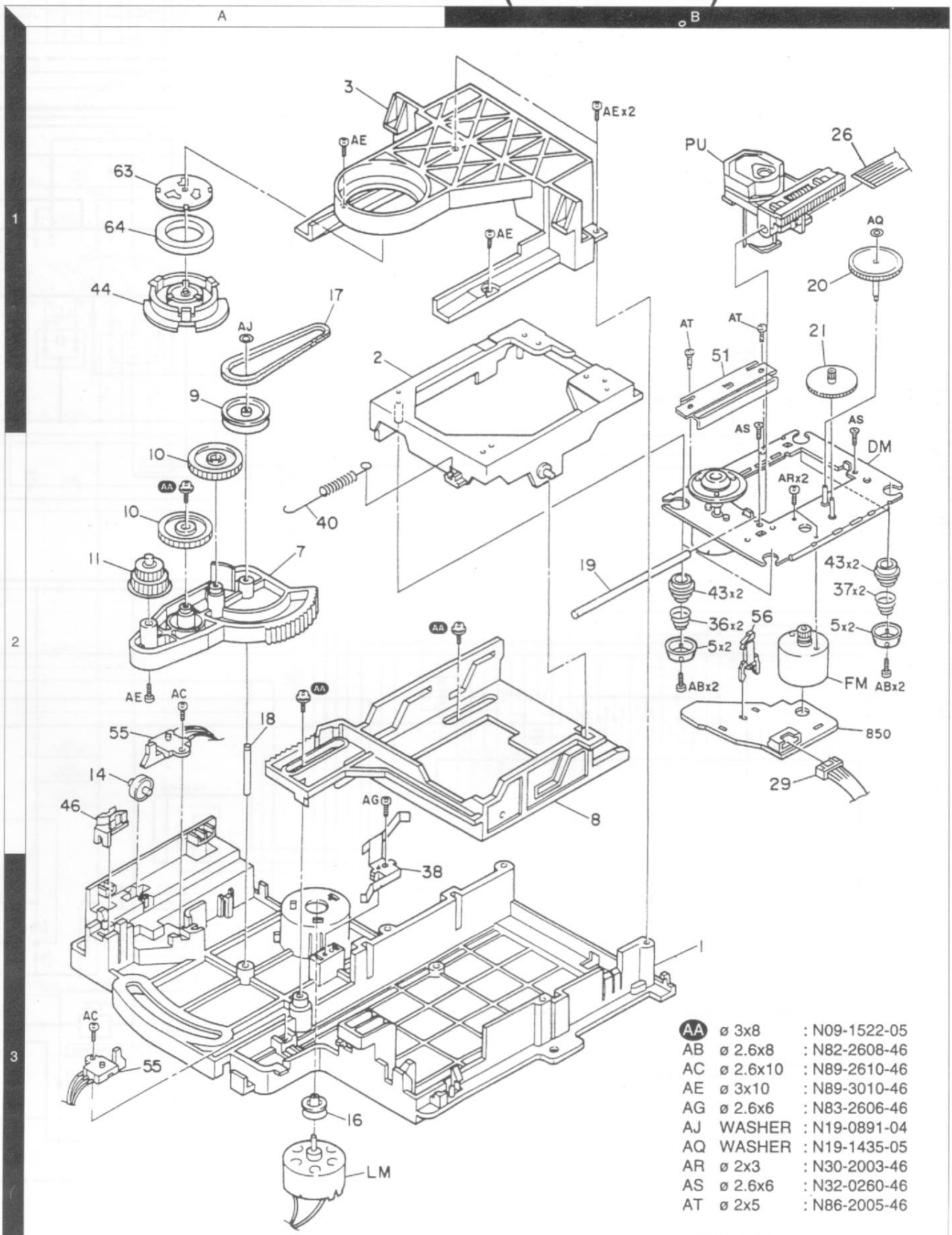
The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage dur ing PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP.

EXPLODED VIEW (UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (MECHANISM)



AA	ø 3x8	: N09-1522-05
AB	ø 2.6x8	: N82-2608-46
AC	ø 2.6x10	: N89-2610-46
AE	ø 3x10	: N89-3010-46
AG	ø 2.6x6	: N83-2606-46
AJ	WASHER	: N19-0891-04
AQ	WASHER	: N19-1435-05
AR	ø 2x3	: N30-2003-46
AS	ø 2.6x6	: N32-0260-46
AT	ø 2x5	: N86-2005-46

CDM-25

Parts with the exploded numbers larger than 700 are not supplied.

103CD/104CD/1050CD/DP-R797/R3090/R4090

SPECIFICATIONS

[Format]

System .....Compact disc digital audio system
Laser .....Semiconductor laser

[D/A Convertors]

D/A Conversion 1Bit
Oversampling .....8 fs (352.8 kHz)

[Audio]

Frequency response.....4 Hz ~ 20 kHz, ± 0.5 dB
Signal to noise ratio.....More than 95 dB
Dynamic range .....More than 95 dB
Total harmonic distortion +noise
.....Less than 0.008 % (at 1 kHz)
Wow & flutter .....Unmeasurable Limit
Output level / impedance
Fixed (DP-R3090) .....2.0 V / 0.8 kΩ
Variable (DP-R4090).....(max.) 2.0 V / 0.8 kΩ
Headphone output (max.)
(DP-R4090 only) .....20 mW (32 Ω)

[General]

Power consumption.....13 W
Dimensions.....W : 440 mm (17-5/16")
H : 125 mm (4-15/16")
D : 397 mm (15-5/8")
Weight (Net) .....5.0 kg (11.0 lb)

Note :
We follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note:
Component and circuity are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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